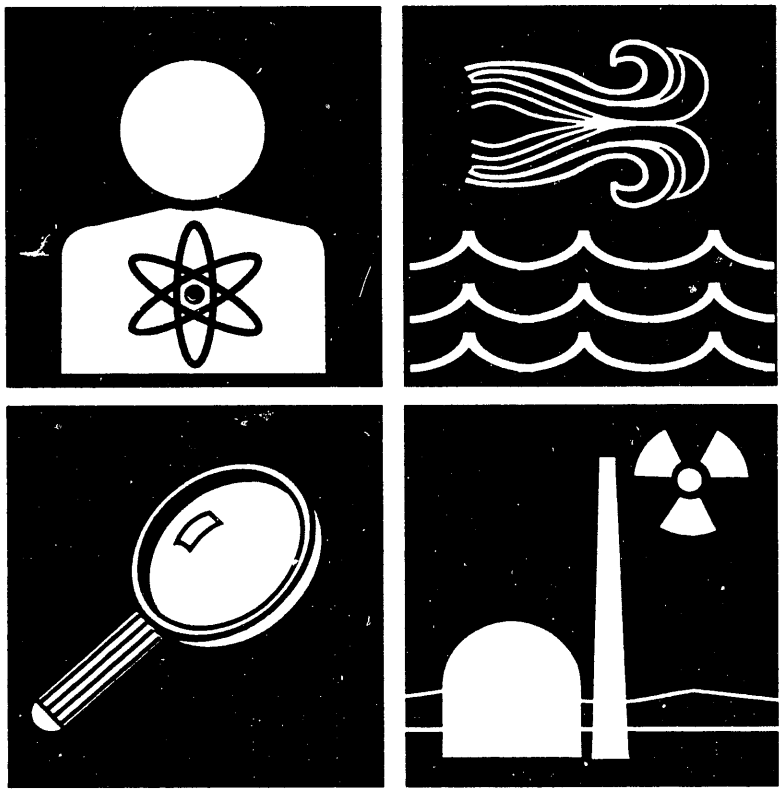
PNL-6450-47-HEDR
UC-707

Hanford Environmental Dose Reconstruction Project

Monthly Report

September 1991



Prepared for the Technical Steering Panel

Battelle

PNL-6450-47-HEDR

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PNL--6450-47-HEDR

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HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION PROJECT

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Prepared for the Technical Steering Panel

Pacific Northwest Laboratory
Richland, Washington 99352

PNL-6450-47-HEDR
UC-707

HANFORD ENVIRONMENTAL DOSE
RECONSTRUCTION PROJECT

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Preface

This monthly report summarizes the technical progress and project status for the Hanford Environmental Dose Reconstruction (HEDR) Project being conducted at the Pacific Northwest Laboratory (PNL)[a] under the direction of a Technical Steering Panel (TSP). The TSP is composed of experts in numerous technical fields related to this project and represents the interest of the public. The U.S. Department of Energy (DOE) funds the project.

Figure 1 shows the PNL organizational structure of the HEDR Project. Table 1 shows the status of PNL work to comply with directives issued by the TSP.

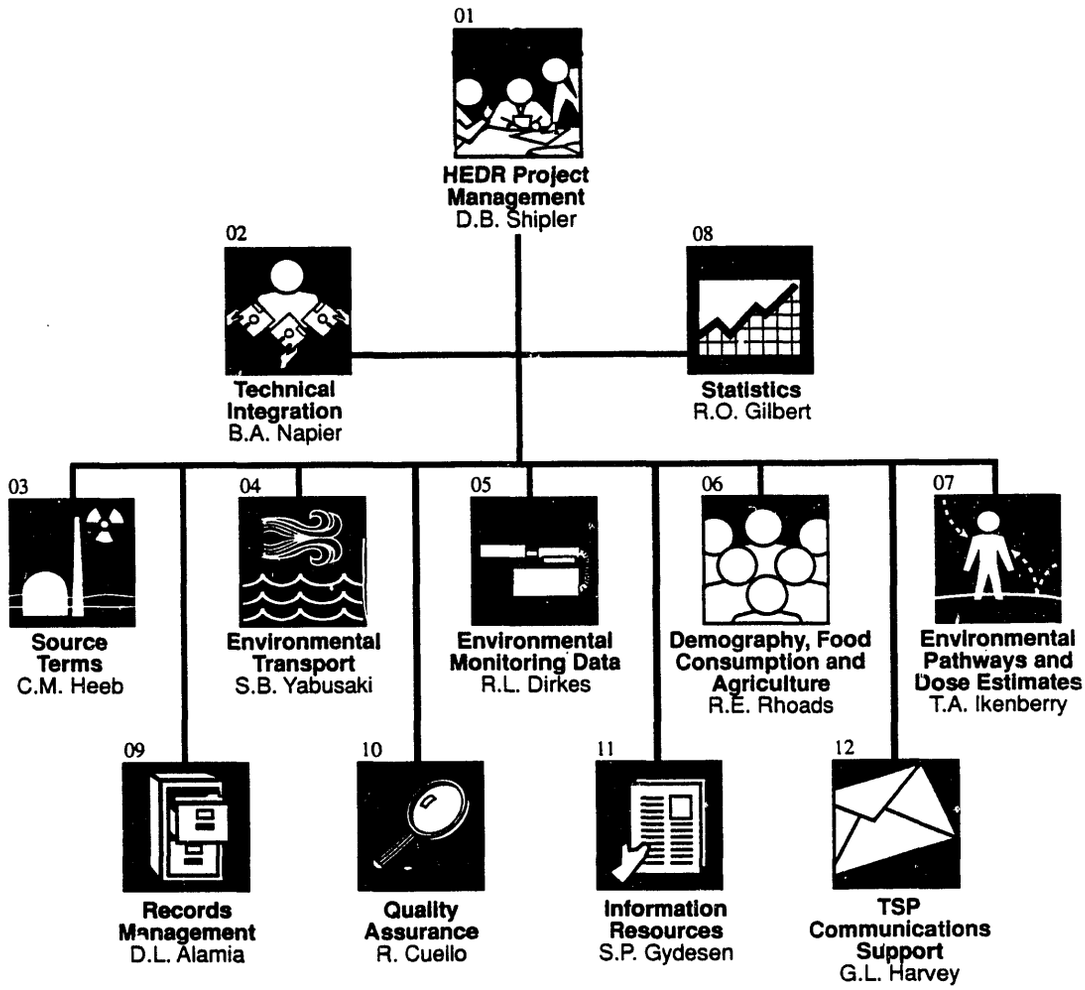


FIGURE 1. Organizational Structure of the Hanford Environmental Dose Reconstruction Project

[a] Battelle Memorial Institute operates the Pacific Northwest Laboratory.

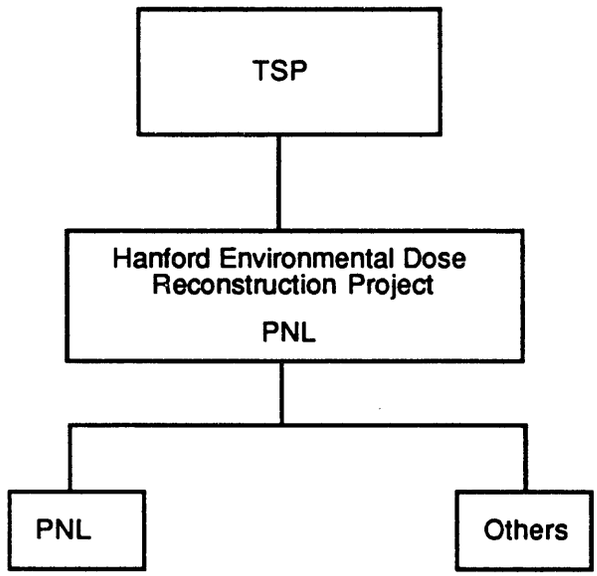
TABLE 1. Status of Directives[a]

		Complete	Ongoing	Phase I	FY 1991
88-1	(a) Proposals		x		
	(b) Source Terms			x	x
88-2	Vegetation			x	x
88-3	Status Reports		x		
88-4	Ground Water			x	x
88-5	Maps	x			
88-6	Resumes	x			
89-1	Indian Tribes			x	x
89-2	Bioassay Data			x	
89-3	Document Handling		x		
89-4	Reactor Purging			x	x
89-5	Phased Approach	x		x (modified 2/14/91)	
89-6	Meeting Materials		x		x
89-7	Tech Communication		x		
89-8	Phase II Planning	x			x (modified 2/14/91)
89-9	Project QA Plan		x	x (revised)	x (revised)
89-10	Contracts with Tribes			x	x
90-1	Project Direction (Task Plans)		x		x
90-2	Dose Cut-Off Limit			(deferred)	

[a] Note: For simplicity, TSP directives are identified here using only key words. The complete directives are available from the TSP.

Executive Summary

The objective of the Hanford Environmental Dose Reconstruction Project is to estimate the radiation doses that individuals and populations could have received from nuclear operations at Hanford since 1944. The project is being managed and conducted by the Pacific Northwest Laboratory (PNL) under the direction of an independent Technical Steering Panel (TSP).



The TSP consists of experts in environmental pathways, epidemiology, surface-water transport, ground-water transport, statistics, demography, agriculture, meteorology, nuclear engineering, radiation dosimetry, and cultural anthropology. Included are appointed technical members representing the states of Oregon and Washington, a representative of Native American tribes, and an individual representing the public.

The project is divided into the following technical tasks. These tasks correspond to the path radionuclides followed, from release to impact on humans (dose estimates):

- Source Terms
- Environmental Transport
- Environmental Monitoring Data
- Demographics, Agriculture, Food Habits
- Environmental Pathways and Dose Estimates.

The Source Terms Task develops estimates of radioactive emissions from Hanford facilities since 1944. These estimates are based on historical measurements and production information.

The Environmental Transport Task reconstructs the movement of radioactive materials from the areas of release to populations. Movement via the atmosphere, surface water (Columbia River), and ground water is studied.

The Environmental Monitoring Data Task assembles, evaluates, and reports historical environmental monitoring data.

The Demographics, Agriculture, Food Habits Task develops the data needed to identify the populations that could have been affected by the releases. Population and demographic information are developed for the general population within the study area. This information will also be developed for several special population groups, including Native American tribes in the study area, Army personnel who were stationed at Hanford, Hanford construction workers, and migrant farm workers.

In addition to population and demographic data, the food and water sources and consumption patterns for populations are estimated because they provide a primary pathway for the intake of radionuclides. Historical dairy farming practices and milk distribution systems are studied because milk is a significant pathway for iodine-131 to enter the human body. Cows could have eaten vegetation contaminated with this radionuclide.

Lifestyle and food habit information will also be developed for individuals included in the Hanford Thyroid Disease Study as a basis for dose estimates and for other interested individuals.

The Environmental Pathways and Dose Estimates Task uses the information produced by the other tasks to estimate the radiation doses individuals could have received from Hanford radiation.

Project reports and Hanford-originated references used in the reports are made available to the public in a public reading room. Project progress is documented in this monthly report, which is available to the public.

Project Summary

Progress

Figure A.1 in Appendix A shows the status of project milestone activities. The following is a summary of activities conducted by HEDR staff in September 1991:

- participated in the HEDR/TSP/Native American Working Group meeting. The Working Group reviewed progress on data collection, discussed FY 1992 plans, and reviewed policy for tribal data information handling and approval.
- submitted revised FY 1992 and FY 1993 Task Plans to the TSP, who approved the FY 1992 plans and are reviewing FY 1993 plans
- continued to enter raw vegetation monitoring data available for the years 1948 through 1951. Data for the years 1949, 1950, and 1951 were entered. Entry of offsite vegetation monitoring data from 1948 was initiated.
- completed coding of the environmental pathways and dose calculations submodels of the revised air pathway code on a VAX computer and began testing to demonstrate a functional code
- finalized the internal audit report. The audit verified the project's compliance with its QA requirements. Audit scope included work performed since July 1990 and focused primarily on the following tasks: Technical Integration, Environmental Transport, Records Management, and Quality Assurance.
- completed meteorological data entry for the years 1944 and 1945 for all meteorological stations used in the Phase I study
- continued review of river data and reports for the Columbia River downstream of McNary Dam. Added approximately 90 Hanford environmental monitoring reports to the data base, including data and information for locations downstream of McNary Dam.
- drafted a revised proposal with staff from the Washington Department of Ecology, the Centers for Disease Control/Indian Health Service Public Health Practice Training Program, and the Hanford Thyroid Disease Study (HTDS) to explore options for better integrating the Native American components of the HEDR and HTDS projects
- provided technical assistance to the Confederated Tribes of the Umatilla Indian Reservation regarding the compilation of food consumption and population gathered to date. Developed an electronic spreadsheet to assist with the entry of data and calculation of average and total foods consumed.
- declassified 44 Hanford-originated documents, all of which are of potential interest/use to the project. Provided the DOE Field Office, Richland (RL) Public Reading room with 66 documents of potential interest/use in the HEDR Project.
- examined nearly 500 documents held by Perkins Coie, Seattle, attorneys for General Electric (GE). These documents were generated by GE when they were the prime contractor for the Hanford Site from 1946-1964. Thirty are already in the HEDR database, and an additional 40 will be given further review to determine their relevance to the project. This review verifies that GE does not hold documents useful to the project that are not already in our collection.

Problems or Changes and Action Taken

Some work will slip from FY 1991 to FY 1992 because additional TSP-requested planning for FY 1992 and 1993 has preempted some work. Funds to complete the slipped work will come from FY 1991 carryover money.

Planned Work for the Next Three Months

- begin preparation of project data management plan
- submit observations on first Validation of Model Predictions model intercomparison exercise and prepare outline for Hanford scenario

- develop recommendation on sufficiency of monitoring data for surface water dose calculations
- complete reconstructing of atmospheric model code
- review tribal interview guides for the Yakima and Nez Perce tribes
- review preliminary tribal food consumption data
- contribute to discussions concerning integration of HEDR with the HTDS and Public Health Practice Training program
- document the revised air pathway code
- resume work on literature search and documentation of radionuclide transfer factors
- identify significant documents that address fuel element failures that occurred in now-decommissioned Hanford production reactors
- identify and retrieve data of ruthenium releases from separations processes
- submit the following milestones to the TSP:
  - project management plan
  - documented Phase I iodine-131 releases
  - documented significant airborne and waterborne releases
  - environmental monitoring data final report
  - vegetation data report
  - letter reports on airborne and waterborne release references
  - surface water transport report
  - wind field modeling report
  - groundwater transport report
  - population estimates final report
  - milk distribution estimates report
  - Iodine-131 conversion factor report
  - remaining HEDR procedure HEDR-TP-3, "HEDR Documentation of Critical Decisions."

Budget Status

Figure 2 shows the budget status of the HEDR Project. Table A.1 in Appendix A shows FY 1991 costs and budget by task and subtasks. Table A.2 shows a Summary of Prior Fiscal Year Costs. Figure A.2 shows TSP budget status.

Capital Status

The HEDR computer system was delivered to Battelle.

In FY 1991, $119K of capital funding was spent from a budget of $135K. A request for funds for FY 1992 capital equipment has not been received. After receiving this request, the HEDR Project will develop and submit a request for FY 1992 capital funds.

1. ID (Contract) Number:	2. Program/Project Title:	3. Reporting Period:
DE-AC06-76RLO 1830	HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION - PNL	SEPTEMBER 1991

4a. Participant Name and Adress	4b. Client Name and Address	5. Start Date / 6. Completion Date
Pacific Northwest Laboratory P.O. Box 999 Richland, WA 99352	RL Richland, Washington 99352	5. Start Date: OCTOBER 1990 6. Completion Date: SEPTEMBER 1991

7. FY 91 | 8. Months

9. Cost Status

a. $ Expressed in: Thousands

b. B&R No./ Subaccount No.: 12578 HR0120

c. FIN No.

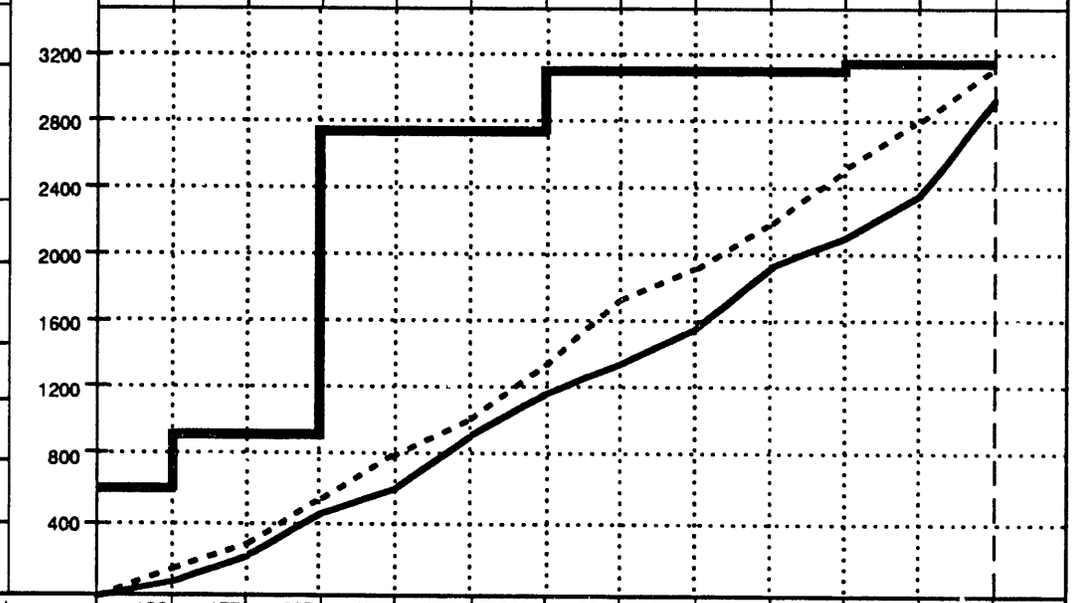
d. Actual Costs Prior Years: 7,676 (a)

e. FY Budget: 3,141 (b)

f. Total Budget

g. FY Funds Auth.: 3,141 (c)

h. Total Funds Auth.: 10,817 (d)



		O	N	D	J	F	M	A	M	J	J	A	S	FY92
Costs	i. Planned	129	177	227	270	275	280	284	280	309	291	295	324	
	j. Actual	121	129	183	214	237	257	206	215	339	202	261	513-	
	k. Variance	9	48	39	56	38	23	78	65	-30	89	34	189	
	l. Cum Planned	129	306	533	803	1078	1358	1642	1922	2231	2522	2817	3141	
	m. Cum Actual	121	249	437	651	888	1145	1351	1566	1905	2107	2368	2928	
	n. Cum Variance	9	57	96	152	190	213	291	356	326	415	449	303	

10. Legend: Planned - - - - - Actual ——— Funds Auth. ▬▬▬ 90% Funds Spent ▷ Time Now

(a) Actual cost prior years excludes TSP costs. (b) Projected FY budget excludes TSP budget. (c) Includes carryover and PNL's share of current fiscal year funding that has been received. (d) FY88-91; excludes capital and TSP funding.

11. Name/Signature of Participants Prog/Proj Manager & Date

D. B. SHIPLER

FIGURE 2. HEDR Project Budget Status - Pacific Northwest Laboratory

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Figures

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Task 01 PNL Project Management

Objective

The objective of the PNL Project Management Task is to provide project planning, control, and management of PNL dose reconstruction work in accordance with TSP direction.

Progress

***Milestone 0101C* - Project Management Plan, due September 1991 and rescheduled to November 1991 (FY 1992)**

- continued preparing plan

Other Activities

- gave a briefing on HEDR Project to R. Goldsmith and R. Brich of DOE and J. Smith and M. Sage of Centers for Disease Control (CDC). DOE will provide $4M for HEDR for FY 1992. $1.333M of this will be provided to RL for the first four months of FY 1992 before the CDC contract is signed. The remaining $2,667M will be provided to CDC to be distributed through new CDC contracts. The additional $1M for scope approved by the TSP in the FY 1992 Task Plans will be shifted into the CDC contract period and negotiated with CDC.
- submitted revised FY 1992 and FY 1993 Task Plans to the TSP, who approved the FY 1992 plans and are reviewing the FY 1993 plans
- held the QA audit close-out meeting for the HEDR Project. One "observation" and 16 "concerns" were proposed; no "findings" were identified.
- briefed W. Wiley, PNL Director, on the HEDR Project, including the need for declassifying production information after 1960
- provided a written estimate of past and future project funds supporting Native American interests, in response to a TSP request

Major Problem Areas or Changes and Action Taken

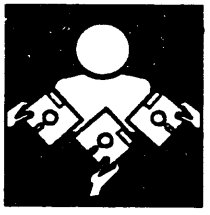
None

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- issue FY 1993 Task Plans after TSP approval
- complete HEDR Project Management Plan
- prepare proposal to the CDC for a 2-year contract for dose reconstruction work to begin in February 1992 ❑



Task 02 Technical Integration

Objective

The objective of the Technical Integration Task is to provide technical overview of the project to ensure that appropriate technical activities are planned, that appropriate information is generated, and that technical task work is integrated effectively for performing the final dose calculations.

Progress

***Milestone 0202A* - Draft Code Design Specifications, due April 1991 and rescheduled to December 1991 (FY 1992)**

- completed document and submitted to internal clearance
- made the new HEDR computer system operational

Other Activities

- attended meeting with TSP members and staff before the Native American Working Group meeting in Richland and attended Native American Working Group meeting in Pasco
- prepared Geographic Information System maps for the October TSP meeting
- continued developing decision analysis techniques for internal project application

Major Problem Areas or Changes and Action Taken

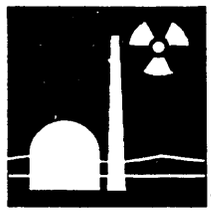
None.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- attend Native American Working Group meetings
- submit observations on first Validation of Model Predictions (VAMP) model intercomparison exercise and prepare outline for VAMP Hanford scenario
- continue coordinating efforts with thyroid disease study personnel
- begin efforts to prepare project data management plan
- coordinate with Surface Water Modeling Subtask to develop recommendation on sufficiency of monitoring data for surface water dose calculations ❑



Task 03 Source Terms

Objective

Source terms are the amount and type of radioactive materials released to the environment. The objective of the Source Terms Task is to develop estimates of radioactive emissions since 1944 from Hanford facilities based on historical measurements and production information. Source term estimates are used by Environmental Transport Task members to reconstruct the concentrations of radionuclides in the environment.

Progress

Milestone 0302A **- Documented Phase I Iodine-131 Releases, due May 1991 and rescheduled to December 1991 (FY 1992)**

- conducted a review of the literature pertaining to the iodine-131 release fraction. A production test was described in the literature that gives a more accurate estimate of the release factor than was previously available. A probability distribution was developed using the new reference, which will be used in calculating the iodine releases via the Source Term Release Model (STRM).
- conducted a review of the discharged fuel specific power peaking factor which determines the iodine-131 content. As a result of this review, a new method was developed that has the potential of being more accurate, with narrower uncertainty limits. The documentation was delayed to implement the new peaking factor method.

Milestones 0303A and 0304A **- Documented Significant Airborne Radionuclides, 1944-1957, and Documented Significant Waterborne Radionuclides, 1944-1957, due July 1991 and rescheduled to November 1991 (FY 1992)**

- completed PNL internal review; now undergoing PNL clearance

Milestone 0305A **- Iodine-131 Release Model Report, due FY 1993**

- completed coding of the STRM, but no files were produced pending completion of the revisions to the iodine-131 release calculations. A mechanism that was not envisioned in the original scope of STRM was included. This is the capability to account for releases that occur from parts of the separations plant other than the dissolving cell. This represents a significant fraction of the iodine-131 release and, more importantly, it impacts the release timing because it can occur four or five days after the initiating dissolver cut is complete.

Major Problem Areas or Changes and Action Taken

Milestones 0302A, 0303A, and 0304A were moved into FY 1992. Milestones 0303A and 0304A, which are letter reports on airborne and waterborne release references, will be sent to the TSP in November. Milestone 0302A, the iodine closure document, will be delayed until new peaking factor calculations are completed. The results are required inputs to the final release

estimate uncertainties. The output will be available to the HEDR Air Transport Subtask. FY 1991 carryover funding will be used to complete these calculations and documentation.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- complete letter reports on airborne and waterborne release references and send to TSP
- complete peaking factor calculations ❑

Task 04 Environmental Transport

Objective

The objective of the Environmental Transport Task is to reconstruct the movement of radioactive materials (the source term information) from the areas of release to the environment. Radionuclide movement via the atmosphere, Columbia River, and groundwater are studied.

Progress

Milestone 0402B **- MESOILT2 Version 2.0 Report, due December 1991 (FY 1992)**

- submitted three letter reports to peer review: a summary of the March 1991 atmospheric modeling meeting, iodine partitioning, and iodine washout. These latter two documents will be used in the MESOILT2 report.

Milestone 0402D **- Meteorological Data Report, due December 1991 (FY 1992)**

- continued entry of meteorological data for 1944-1947. Data entry for 1944 and 1945 was completed for all meteorological stations used in the Phase I study.

Milestone 0403A **- Groundwater Report, due December 1991 (FY 1992)**

- continued progress on offsite migration pathway. Reviewed remaining Hanford monitoring documents.

Milestone 0404A **- Columbia River Data, 1944-1989, due December 1991 (FY 1992)**

- continued review of river data and reports for the Columbia River downstream of McNary Dam. Added to these reports approximately 90 Hanford environmental monitoring reports that included data and information for locations downstream of McNary Dam.
- developed a summary listing for the published articles and reports to include the following information: 1) radionuclide measurements in water column, sediments, and biota with time and location; 2) processes involved in the transport of radionuclides (e.g., sorption); 3) important conclusions; 4) relevant comments; and 5) related references

Major Problem Areas or Changes and Action Taken

The atmospheric modeling revision effort is behind schedule as a result of previous planning efforts and limited staff availability. The variances in cost and schedule are consistent with this delay. A major recruiting effort is under way in the Atmospheric Sciences Department.

Fiscal year-end activities on other projects prevented completion of the offsite migration pathway section of the Columbia River report, including the estimate of groundwater contaminant discharge to the Columbia River. This work will be completed using carryover funding into FY 1992.

The surface water transport review of Hanford documents by the Environmental Monitoring Task is not complete but should be finished by the end of November 1991. Extensive work commitments on outside projects coupled with limited staff availability reduced the work effort on the Hanford Reach surface water review.

Variance

The cumulative cost underrun was caused by delays on milestone reports. Funds will be carried over to complete outstanding milestones.

Planned Work for the Next Three Months

- complete the wind field modeling report
- complete reconstructing of the atmospheric model code
- continue work on data bases for use with the revised atmospheric model
- complete peer, project, and editorial review of the groundwater transport subtask document for submittal to the TSP at the end of December 1991
- continue the review of surface water literature and data base ❑

Task 05 Environmental Monitoring Data

Objective

The objective of the Environmental Monitoring Data Task is to assemble, evaluate, and summarize key historical measurements of the concentrations of radionuclides in the environment around the Hanford Site. Radionuclide concentrations have been measured at various times in air, drinking water, foods, fish, the Columbia River, soil, and in other materials. These measurements are evaluated to estimate their accuracies and then used by the Environmental Pathways and Dose Estimates Task to estimate radiation doses and by the Environmental Transport Task to calibrate computer models.

Progress

***Milestone 0502A* - Vegetation Data Report, due September 1991 and rescheduled to December 1991 (FY 1992)**

- continued to enter the raw vegetation monitoring data available for the years 1948 through 1951. Data for the years 1949, 1950, and 1951 was entered. Entry of off-site vegetation monitoring data from 1948 was initiated. Further entries for 1948 will not be made unless it is deemed necessary for future HEDR model verification and validation efforts. All data entries made to date were verified. The report is being prepared, including biases, uncertainty, conversion factors, data retrieval, data entry, and data summaries.

Monitoring Document Search and Inventory (Subtask 0503)

- continued cross-comparisons among the Environmental Monitoring Document Database (EMDD) list and the Hanford Information Resources Tracking System (HIRTS) title entries. Document entries into the EMDD are continuing as they are located or received from Task 11 staff. Presently, more than 900 document title entries have been made.

Surface Water Data (0404)

- Technical activities are conducted in support of Subtask 0404, Task 04, Environmental Transport, and are reported under that section.

Major Problem Areas or Changes and Action Taken

Milestones 0501A (Environmental Monitoring Data Final Report) and 0502A (Vegetation Data Report) continue to be delayed. Staff required for the completion of these milestones have been unable to complete the reports because of the overcommitment of key personnel and the inability to bring qualified staff on board to meet the increasing demands. Staff commitments are being investigated to correct this situation.

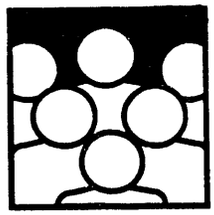
Variance

The cumulative overrun was caused by the extensive amount of vegetation monitoring data found and entered into the database.

Planned Work for the Next Three Months

- finalize Milestone 0501A, Environmental Monitoring Data Final Report

- complete Milestone 0502A, Vegetation Data Report
- collect, inventory, and begin summarizing additional Columbia River monitoring data ❑



Task 06 Demography, Food Consumption and Agriculture

Objective

The objective of the task is to develop the demographic, food consumption, and food production information needed to estimate doses. Demographic information for populations that may have been exposed to radionuclides during the time period of interest is developed for the general population and for several special population groups that are not adequately represented by the U.S. Census.

Sources and quantities of food and water consumed by these populations will be estimated. In particular, milk produced from cows represents a significant food pathway for iodine-131 if the cows ate vegetation contaminated with radionuclides. Dairy farming practices and milk distribution systems are studied to identify the populations that may have consumed potentially contaminated milk.

Progress

Milestone 0601A **- Population Estimates Final Report, due April 1991 and rescheduled to November 1991 (FY 1992)**

- responded to TSP comments and began preparing this report for final TSP approval

Milestone 0601C **- Milk Distribution Estimates Report, due April 1991 and rescheduled to November 1991 (FY 1992)**

- responded to final TSP comments and began preparing this report for final TSP approval

Preliminary Native American Data (Subtask 0602)

- drafted a revised proposal with staff from the Washington Department of Ecology, the Centers for Disease Control (CDC)/Indian Health Service Public Health Practice Training Program, and the Hanford Thyroid Disease Study (HTDS) to explore options for better integrating the Native American components of the HEDR and HTDS projects
- met with a TSP member (W. Bishop) and TSP staff to review an estimate of PNL costs associated with HEDR tribal-related activities, to discuss the HEDR/HTDS program integration proposal, to review the need for work order extensions for tribal contracts, and to discuss the revised data and document release policy statement that the Native American Working Group is considering. At this meeting, PNL staff also made several preliminary suggestions regarding work that would benefit from tribal input and take advantage of tribal project staff availability while preliminary dose calculations are being prepared by PNL staff.
- traveled to Mission, Oregon, to provide technical assistance to the Confederated Tribes of the Umatilla Indian Reservation regarding the compilation of food consumption and population data gathered to date. PNL staff developed an electronic spreadsheet to

assist with the entry of data and calculation of average and total foods consumed.

- received supplemental Phase I data from the Coeur d'Alene tribe
- attended the Native American Working Group meeting in Pasco to discuss the HEDR/HTDS program integration proposal and to identify possible follow-on activities for tribal participation after preliminary food consumption and population data have been collected. Gave a presentation on invoice process and procedures.

Milestone 0603B **- Letter Report on Milk Outside Phase I, due September 1991 and rescheduled to FY 1992**

- received two additional expert solicitations for use on the milk model
- initiated interviews in Ferry, Stevens, and Okanogan counties to support the HTDS
- finalized the indefinite quantity contracts with Social and Economics Sciences Research Center for the milk model work

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative underrun was caused by a delay in invoicing for the milk model work.

Planned Work for the Next Three Months

- review tribal interview guides for the Yakima and Nez Perce tribes
- identify and refine specific data compilation protocols
- review preliminary tribal food consumption data
- contribute to assist in developing the Native American Continuing Research Plan
- contribute to discussions concerning integration of HEDR with the HTDS and the Public Health Practice Training program
- continue collecting and evaluating milk and exposed fruits and vegetables production and distribution information ❑

Task 07 Environmental Pathways and Dose Estimates

Objective

The objective of the task is to use calculated and measured concentrations of radionuclides provided by members of the Environmental Transport Task and the Environmental Monitoring Data Task to calculate doses to populations, typical individuals, and specific individuals. These calculations include doses via direct transfer of radionuclides from concentrations in air and water to people (such as via breathing, drinking, and immersion). The calculations also include doses from radionuclide concentrations in air and water transferred through environmental pathways, such as soil, plants, animals, and fish, to people.

Progress

***Milestone 0702A* - Air Pathway Dose Code Documentation, due December 1991 (FY 1992)**

- completed coding of the environmental pathways and dose calculation sub-models of the revised air pathway code on a VAX computer and began testing to demonstrate a functional code. An input parameter file containing best-estimate values was generated for testing of the environmental pathways and dose calculation sub-models. It was discovered that the large virtual memory requirements of the revised air pathway model could not be accommodated on the VAX. To alleviate this problem, programmers modified the code to use limited, selected nodes (for demonstrating a functional code). It is anticipated that functionality of the revised air pathway code will be demonstrated by the end of October 1991.

Major Problem Areas or Changes and Action Taken

Demonstration of a functional revised air pathway code was delayed, as described under Milestone 0702A. Staff continue to work on this effort within the computer limitations by using small sections of the entire code.

Work on Milestone 0703A, Model Parameters Report (radionuclide transfer factor literature review and documentation) was temporarily stopped when FY 1991 funding for this subtask ran out. Work will begin again in FY 1992 (October 1991).

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- demonstrate that the revised air pathway code is functional. Transfer and convert the code and data to the SUN-4 computer.
- complete the parameter selection sub-model

- meet with HTDS personnel to gather information to help in determining the structure of the individual data input sub-model of the revised air pathway code
- begin documenting the revised air pathway code (Milestone 0702A)
- resume work on literature search and documentation of radionuclide transfer factors (Milestone 0703A) in October ❑

Task 08
Statistics

Objective

The objective of the task is to provide statistical support to other technical tasks and develop and apply sensitivity and uncertainty analyses. Sensitivity analyses will be used to identify parameters with the greatest influence on dose estimates. Sensitivity analyses results will be used to focus resources where the benefit in terms of accurate dose estimates is greatest. Uncertainty analyses enable the project to determine the extent to which the accuracy and precision of the dose estimates are influenced by accuracy and precision in the input parameters.

Progress

***Milestone 0802A* - Iodine-131 Conversion Factor Report, due December 1991 (FY 1992)**

- conducted additional uncertainty analyses and statistical analysis of the uncertainty results. Documented QA and software control procedures for the uncertainty analyses.

Other Activities

- the following paper was published:

  Gilbert, R. O., B. A. Napier, A. M. Liebetrau, and H. A. Haerer. 1991. "Statistical Aspects of Reconstructing the ^{131}I Dose to the Thyroid of Individuals Living Near the Hanford Site in the Mid-1940s," *Radiation Protection Dosimetry* 36:195-198.

- met with S. Shindle (Task 07, Environmental Pathways and Dose Estimates) to assist her with literature reviews and the approach for determining best values and distributions for environmental transfer parameters in the dose model

- met with C. Heeb, leader of Task 03 (Source Terms), to assist with specification of probability density functions for model parameters

- wrote a computer code that generates random values from a discrete cumulative distribution function using Latin Hypercube Sampling

- conducted activities to support Task 02 (Technical Integration) and Milestones 0402C and 0402E of Task 04 (Environmental Transport), as reported under Tasks 02 and 04

Major Problem Areas or Changes and Action Taken

None.

Variance

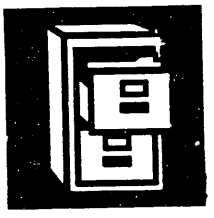
No significant cumulative variance.

Planned Work for the Next Three Months

- complete Milestone 0802A, Iodine-131 Conversion Factor Report

- assist Task 03 (Source Terms) in incorporating uncertainty into source term model outputs

- continue to work with S. Shindle to develop best values and distributions for environmental transfer parameters
- continue to conduct work with Task 02 (Technical Integration) and Task 04 (Environmental Transport) in support of Milestones 0202C, 0402C, and 0402E ❑



Task 09 Records Management

Objective

The objective of the Records Management Task is to provide storage and control of completed project records, maintain an automated inventory of all project documentation, and provide a reference service to project staff and the TSP.

Progress

- received project records from the HEDR Project Office (153 records/1280 pages)
- verified, processed, and stored project records (92 records/1342 pages)
- transferred three packages of records to the RL Public Reading Room (7 records/ 199 pages)

Major Problem Areas or Changes and Action Taken

None.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- continue processing incoming project records
- continue transferring processed project records to the RL Public Reading Room ❑

Task 10 Quality Assurance

Objective

The objective of this task is to ensure continuous quality assurance (QA) support and coordination with all project tasks. This objective is met through the identification and documentation of QA requirements in the form of a QA Plan and periodic monitoring of project activities during the life of the project to ensure compliance with these requirements.

Progress

Milestone 10B **- Internal Audit Report, due September 1991 and rescheduled to October 1991 (FY 1992)**

- the audit report was finalized in early October by PNL's internal audit group. The audit verified the project's compliance with the project's QA requirements. The audit scope included work performed since July 1990 and focused primarily on the following tasks: Technical Integration, Environmental Transport, Records Management, and Quality Assurance. In addition, a data traceability study was performed by technical auditors in the Environmental Transport Task. The overall audit results indicate that the project is well managed. Only one observation was noted by the auditors, which was related to verification of hard copy data on the atmospheric model after entry into the flat files.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative underrun was caused by less quality assurance support required than anticipated.

Planned Work for the Next Three Months

- issue remaining HEDR procedure HEDR-TP-3, "HEDR Documentation of Critical Decisions"
- provide a corrective action response to PNL's internal audit
- continue performing oversight activities to check for compliance to project technical, QA and data quality objective requirements ❑

Task 11 Information Resources

Objective

The objective of the Information Resources Task is to work with other tasks to meet information needs, including ensuring that all data referenced in the reports are publicly available and establishing a microcomputer-based tracking system for ready retrieval of historical information.

Progress

Declassification (Subtask 1102)

- worked with M. Robkin and S. Davis (TSP) during onsite visits for reviewing classified documents to determine those having potential use/interest to the project and that would be recommended for declassification review. Status of these reviews is incorporated in Table 11.1.

- declassified 44 Hanford-originated documents, all of which are of potential interest/use to the project. Table 11.1 shows the status of declassification to date.

- received from Hanford Education Action League (HEAL) via the TSP a request to declassify an additional 353 documents from the initial listing of nearly 11,000 Hanford-originated documents generated from 1944-1960 that were classified as of June 1990. Of the 353, 93 have already been declassified and 9 have already been reviewed by a TSP member. J. Thomas, HEAL, stated that "the criteria for identifying these documents was not solely on the basis of their possible contribution to the calculation of radiation doses for HEDR." Consequently, M. Robkin reviewed the titles of the remaining 251 documents and selected about one-third for review for relevance to the HEDR Project. Approximately 10 remain to be reviewed.

Resource Identification and Availability (Subtask 1103)

- examined nearly 500 documents held by Perkins Coie, Seattle, attorneys for General Electric (GE). These documents were generated by GE when they were the prime contractor for the Hanford Site from 1946-1964. Copies of these 500 are in the PNL collection or available on site. Thirty are already in the HEDR database, and an additional 40 will be given further review to determine their relevance to the project. This review verifies that GE does not hold documents useful to the project that are not already in our collection.

- added new citations to the tracking system, which now contains more than 4800 publications

- provided the RL Public Reading Room with 66 documents of potential interest/use in the HEDR Project. A title listing of these reports is given in Appendix B.

- reviewed and commented on initial draft letter reports containing references for radioactive releases to the atmosphere and Columbia River from Hanford operations for the years 1944-1957

- prepared an initial draft letter report identifying daily reactor operating data for the years 1944-1971

TABLE 11.1. Declassification by Task 11 Staff of Hanford-Originated Documents for the HEDR Project

Document Type	Number	Comment
Total Hanford-originated documents generated from 1944-1960 that were classified as of 6/90	11,000	Title list made available to TSP, states, and interest groups
Subset of the 11,000 requested for declassification by TSP, states, and interest groups	2,000	Only about 1,450 of these are actually unique documents
Number of documents from the 1450 requested by more than 1 person	367	Completed and reported to the TSP 6-28-91
Number of documents from the 1450 requested by single individuals	1,066	
Number of documents from single-request list declassified to date	739	
Number of documents identified by TSP member to be of interest	269	
Number of documents deemed by a TSP member to be of no interest to project or public	252	
Approximate number of documents yet to be reviewed from single-request list	~20	

Documents Declassified	Hanford Historical	HEDR-Related[a]
March 1987 - September 1987 (FY 1987)	35	27
October 1987 through September 1988 (FY 1988)	52	37
October 1988 through September 1989 (FY 1989)	186	177
October 1989 through September 1990 (FY 1990)	455	236
October 1990 through September 1991 (FY 1991)	1323	599
TOTAL (March 1987 - September 1991)	2051	1076

(a) Reported in HEDR monthly reports and included in a HEDR master listing in the RL Public Reading Room. Some of these are from the list requested by the TSP and the public.

DOE Public Reading Room Activity

- In September, the RL Public Reading Room had 5 HEDR users and distributed 24 HEDR reports.

Major Problem Areas or Changes and Action Taken

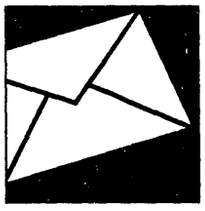
The IBM-AT used for the Task 11 tracking data base has reached its memory capacity and will be replaced by an IBM PS-2 in the near future.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- continue to add input to the information resources tracking data base and provide documents to the RL Public Reading Room in an orderly, timely fashion
- watch for information that may explain in detail, and support data in, "green run" document HW-17381 DEL
- identify significant documents that address fuel element failures that occurred in now decommissioned Hanford production reactors
- continue to develop "packing lists" for boxes of retired Hanford records of potential interest/ use to the project
- identify and collect documents that address reactor purges, 1944-1971
- from the prioritized list of Hanford-originated classified documents, declassify with or without deletions, those documents reviewed by TSP members and identified as being of use to the project
- identify and retrieve data of ruthenium releases from separations processes ❑



Task 12 TSP Communications Support

Objective

The objective of this task is to assist the TSP in developing and implementing communications strategies to further establish an effective, informative dialogue with interested audiences, provide public and media relations support, and manage activities that foster a better understanding of the HEDR process and its progress.

Progress

***Milestone 1202B* - Videotape, due July 1991 and rescheduled to October 1991 (FY 1992)**

- submitted the completed videotape to a duplication firm in Seattle to produce 500 labeled and boxed copies for distribution after full TSP approval

***Milestone 1203A* - Communications Assessment Research, due June 1991, rescheduled to September 1991, and completed**

- coordinated planning with TSP staff to evaluate recently completed research survey results

Other Activities

- provided HEDR Summary Report, August 1991, to K. Spencer, ABC News, New York, per her request
- forwarded a figure of the county census divisions from the Phase I Air Pathway Report to L. Rosenbeuth, Hastings, New York
- discussed the project and transmittal of project information with J. Berger, Philadelphia, Pennsylvania
- provided B. Schlein, TSP, with graphics support for presentation slides
- forwarded copies of the annual Hanford environmental monitoring reports for 1985 to 1989 to S. Bauerschmidt, NUS Corporation
- provided HEDR Project information to P. Walter, Edmonds, Washington, and H. Barron, Santa Ana, California, in response to citizen requests. Referred them to the TSP toll-free telephone information line for additional material and mailing list registration.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused by less than anticipated support for the TSP Communications Subcommittee. Remaining funds will carry over into FY 1992.

Planned Work for the Next Three Months

- complete duplication of TSP video after full TSP approval
- finalize evaluation and summarization of communications assessment survey ❑

Appendix A

Milestones, Schedule and Costs

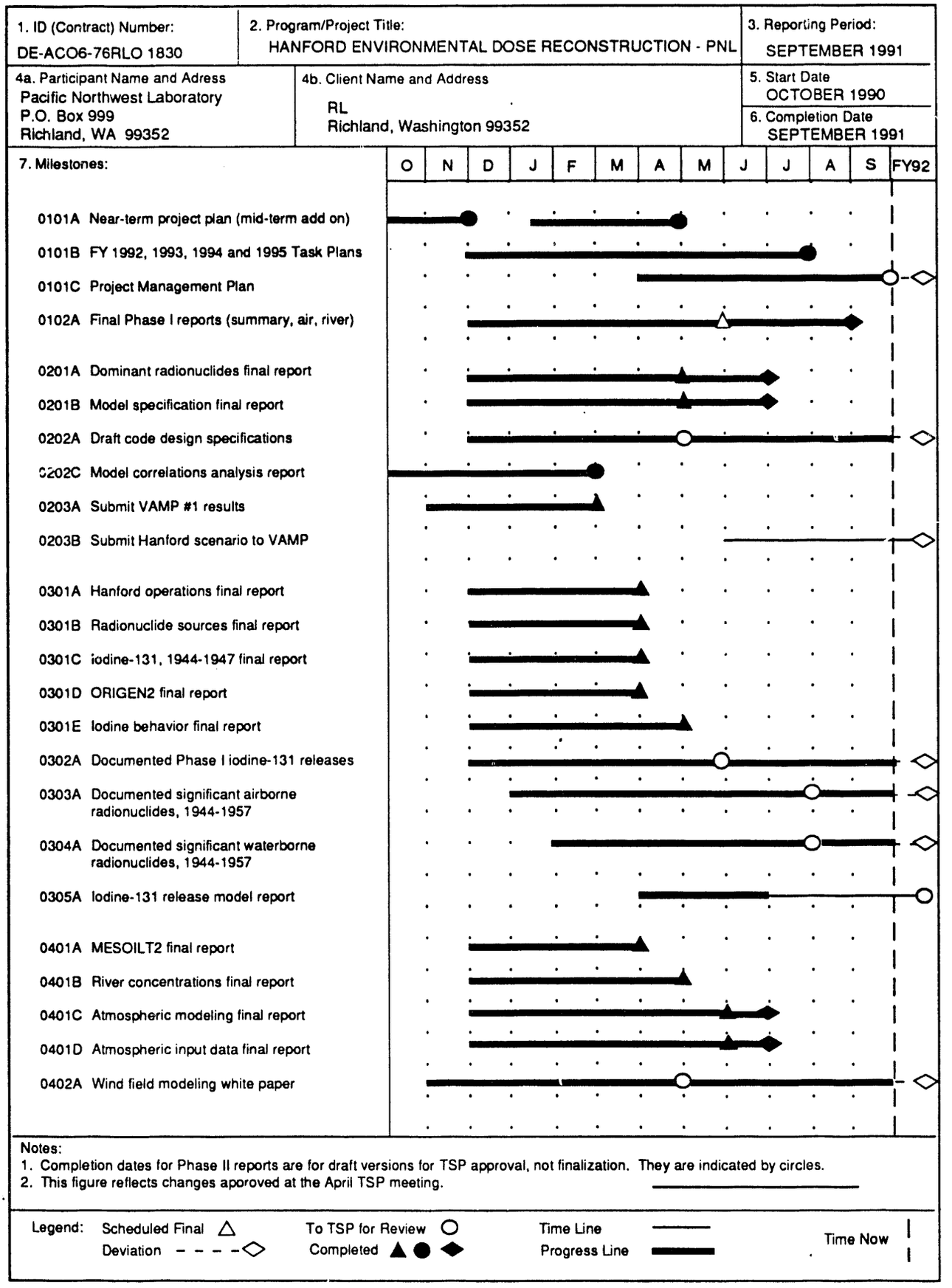
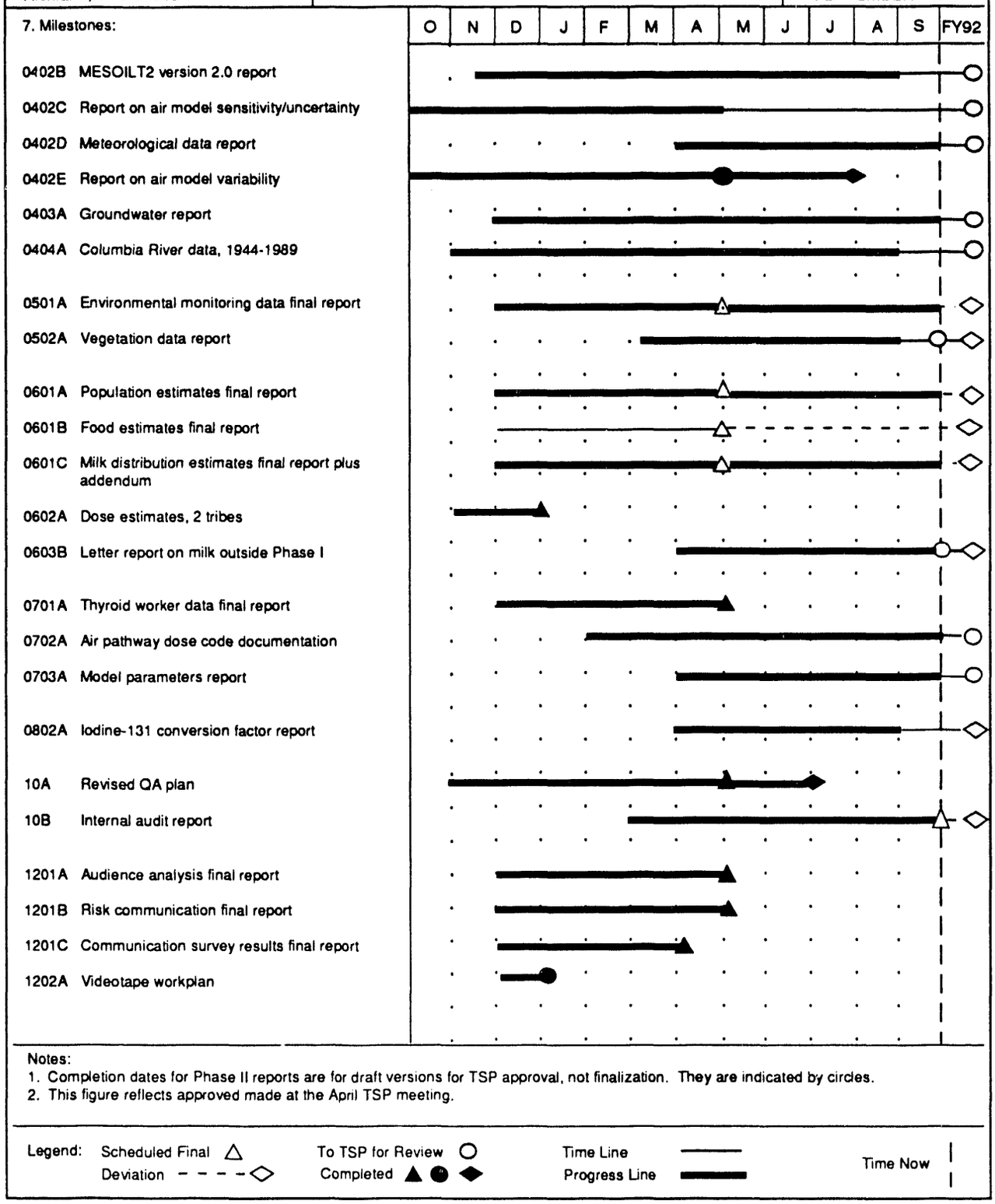


FIGURE A.1. HEDR Project Milestones

1. ID (Contract) Number:	2. Program/Project Title:	3. Reporting Period:
DE-AC06-76RLO 1830	HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION - PNL	SEPTEMBER 1991

4a. Participant Name and Adress	4b. Client Name and Address	5. Start Date / 6. Completion Date
Pacific Northwest Laboratory P.O. Box 999 Richland, WA 99352	RL Richland, Washington 99352	5. Start Date OCTOBER 1990 6. Completion Date SEPTEMBER 1991



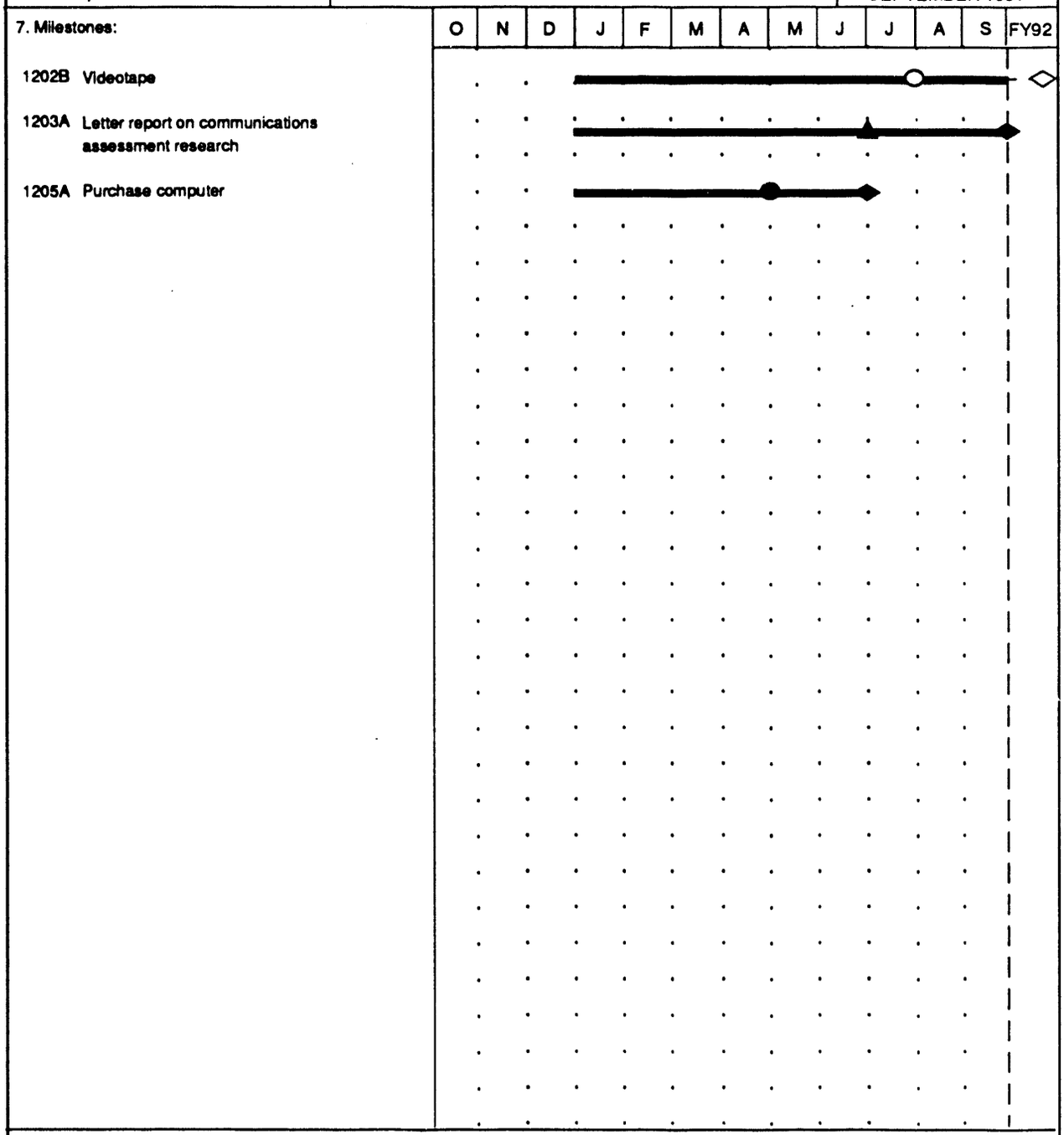
Notes:
1. Completion dates for Phase II reports are for draft versions for TSP approval, not finalization. They are indicated by circles.
2. This figure reflects approved made at the April TSP meeting.

Legend: Scheduled Final △ To TSP for Review ○ Time Line
Deviation - - - -◇ Completed ▲ ● ◆ Progress Line
Time Now

FIGURE A.1. HEDR Project Milestones (contd)

1. ID (Contract) Number:	2. Program/Project Title:	3. Reporting Period:
DE-AC06-76RLO 1830	HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION - PNL	SEPTEMBER 1991

4a. Participant Name and Adress	4b. Client Name and Address	5. Start Date / 6. Completion Date
Pacific Northwest Laboratory P.O. Box 999 Richland, WA 99352	RL Richland, Washington 99352	5. Start Date OCTOBER 1990 6. Completion Date SEPTEMBER 1991



Notes:
1. Completion dates for Phase II reports are for draft versions for TSP approval, not finalization. They are indicated by circles.
2. This figure reflects approved made at the April TSP meeting.

Legend: Scheduled Final △ Deviation - - - -◇ To TSP for Review ○ Completed ▲ ● ◆ Time Line ——— Progress Line ▬▬ Time Now |

FIGURE A.1. HEDR Project Milestones (contd)

TABLE A.1. Cost Summary (Dollars in Thousands)

HEDR Project Tasks	September 1991 Labor $	September 1991 Non-Labor $ (a)	September 1991 Total $	FY 1991 to Date (October 1990 - September 1991) Labor $	FY 1991 to Date Non-Labor $ (a)	FY 1991 to Date Total $	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 01 - Project Management (b)										
0101 Project Control	34	48	82	493	195	688	660	-28	660	5,883
0102 Final Phase I Reports	0	1	1	75	9	84	102	18	102	991
0103 Records Control	4	0	4	64	0	64	70	6	70	1,418
0104 Peer Review	0	0	0	12	1	13	14	1	14	130
0105 Subcontract Administration	3	-1	2	29	0	29	25	-4	25	411
0106 Project Communication Sup	15	2	17	134	26	160	180	20	180	1,489
Subtotal Task 01	56	50	106	807	231	1,038	1,051	13	1,051	10,322
Task 02 - Technical Integration										
0201 Task Mgmt/Proj Integration	6	1	7	102	26	128	105	-23	105	920
0202 Code Design Specification	9	1	10	117	6	123	129	6	129	1,186
0203 IAEA Model Intercompar.	1	-1	0	29	5	34	51	17	51	370
Subtotal Task 02	16	1	17	248	37	285	285	0	285	2,476
Task 03 - Source Terms										
0301 Task Management	0	0	0	18	1	19	20	1	20	165
0302 Closure of Phase I Iodine Rel	3	0	3	30	0	30	29	-1	29	253
0303 Airborne Isotopes not I-131	2	0	2	19	0	19	22	3	22	128
0304 Waterborne Isotopes (44-57)	2	0	2	20	0	20	22	2	22	128
0305 Source Term Release Model	20	6	26	43	6	49	55	6	55	419
Subtotal Task 03	27	6	33	130	7	137	148	11	148	1,093

TABLE A.1. Cost Summary (Dollars in Thousands)

	September 1991			FY 1991 to Date (October 1990 - September 1991)						
	Labor $	Non-Labor $ (a)	Total $	Labor $	Non-Labor $ (a)	Total $	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 04 - Environmental Transport										
0401 Task Management	1	-1	0	37	1	38	42	4	42	400
0402 Atmospheric Transport	16	1	17	250	18	268	302	34	302	3,544
0403 Groundwater Transport	6	0	6	51	2	53	59	6	59	654
0404 Surface Water Transport	33	11	44	122	14	136	142	6	142	1,771
Subtotal Task 04	56	11	67	460	35	495	545	50	545	6,369
Task 05 - Environmental Monitoring Data										
0501 Task Management	0	0	0	0	0	0	0	0	0	0
0502 Vegetation Data	1	23	24	53	24	77	62	-15	62	405
0503 Monitoring Doc Search/Inver	5	0	5	8	2	10	10	0	10	139
Subtotal Task 05	6	23	29	61	26	87	72	-15	72	544
Task 06 - Demographics, Food Consumption, & Agriculture										
0601 Task Management	3	-2	1	34	2	36	30	-6	30	365
0602 Prelim Native American Data	4	119	123	82	121	203	199	-4	199	851
0603 Milk Model Refinements	0	0	0	1	5	6	62	56	62	688
Subtotal Task 06	7	117	124	117	128	245	291	46	291	1,904

TABLE A.1. Cost Summary (Dollars in Thousands)

	September 1991			FY 1991 to Date (October 1990 - September 1991)						
	Labor $	Non-Labor $ (a)	Total $	Labor $	Non-Labor $ (a)	Total $	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 07 - Environmental Pathways & Dose Estimates										
0701 Task Management	2	0	2	30	1	31	26	-5	26	306
0702 Code Restructure	14	18	32	122	34	156	158	2	158	1,321
HTDS Doses (c)	0	0	0	0	0	0	0	0	0	0
0703 Model Parameters	0	0	0	24	1	25	25	0	25	337
Subtotal Task 07	16	18	34	176	36	212	209	-3	209	1,964
Task 08 - Statistics										
0801 Task Management	1	0	1	37	-2	35	38	3	38	213
0802 Task Assistance	12	0	12	49	0	49	52	3	52	303
Subtotal Task 08	13	0	13	86	-2	84	90	6	90	516
Task 09 - Records Management	6	1	7	41	4	45	50	5	50	1,971
Task 10 - Quality Assurance	1	0	1	34	2	36	49	13	49	941
Task 11 - Information Resources										
1101 Task Management	2	0	2	20	1	21	21	0	21	208
1102 Declassification	1	0	1	42	1	43	46	3	46	1,584
1103 Resource Identification/Avail	11	1	12	74	2	76	79	3	79	1,462
Subtotal Task 11	14	1	15	136	4	140	146	6	146	3,254

TABLE A.1. Cost Summary (Dollars in Thousands)

	September 1991			FY 1991 to Date (October 1990 - September 1991)						
	Labor $	Non-Labor $ (a)	Total $	Labor $	Non-Labor $ (a)	Total $	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 12 - TSP Communications Support										
1201 Task Management	2	0	2	20	4	24	39	15	39	591
1202 Video	0	22	22	4	25	29	29	0	29	230
1203 Com Assessment Research	1	42	43	6	43	49	44	-5	44	190
1204 TSP Com Subcom Support	0	0	0	5	2	7	19	12	19	324
1205 TSP Database/AV Support	0	0	0	0	15	15	17	2	17	10
Subtotal - Task 12	3	64	67	35	89	124	148	24	148	1,345
Subtotal, HEDR Project Tasks	**221**	**292**	**513**	**2,331**	**597**	**2,928**	**3,084**	**156**	**3,084**	**32,699**
G&A Credits (d)	0	-44	-44	0	-90	-90	0	90	0	0
Supplemental Funding (e)	0	0	0	0	0	0	57	57	0	0
Subtotal, Project Tasks Plus G&A Credits/Supplemental Funding	**221**	**292**	**513**	**2,331**	**597**	**2,928**	**3,141**	**303**	**3,084**	**32,699**
Technical Steering Panel (f)	0	258	258	0	747	747	800	53	800	0
TOTAL	**221**	**550**	**771**	**2,331**	**1,344**	**3,675**	**3,941**	**356**	**3,884**	**32,699**

(a) Non-labor dollars include expenses such as travel, publication production, procurements, and subcontracts.
(b) Project management includes activities such as project control and administration, project communications, subcontract administration, records control, and peer review.
(c) Funding reallocated by the TSP at the April TSP meeting.
(d) G&A credits applied in August and September, 1991.
(e) Supplemental funding received from DOE-RL. This will be carried over and applied to FY 1992 source terms activities.
(f) TSP costs are administered through subcontracts which are reflected as non-labor costs. Actual TSP expenses include both labor and non-labor.

TABLE A.2. Summary of Prior Fiscal Year Costs

Fiscal Year	Cost	Funding	Carryover(a)	Budget(b)
1988	2,323	2,433	0	2433
1989	3,301	3,400	110	3510
1990	3,558	3,733	209	3942
1991	3,585	3,557	384	3941
TOTAL	**12,767**	**13,123**		

(a) Carryover is unspent budget from prior year.
(b) Budget is current fiscal year funding plus carryover.

1. ID (Contract) Number:	2. Program/Project Title:	3. Reporting Period:
DE-AC06-76RLO 1830	HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION - TSP	SEPTEMBER 1991

4a. Participant Name and Adress	4b. Client Name and Address	5. Start Date / 6. Completion Date
Pacific Northwest Laboratory P.O. Box 999 Richland, WA 99352	RL Richland, Washington 99352	5. Start Date: OCTOBER 1990 6. Completion Date: SEPTEMBER 1991

7. FY 91 | 8. Months

9. Cost Status

a. $ Expressed in: Thousands

b. B&R No./ Subaccount No.: 12578 HR0120

c. FIN No.:

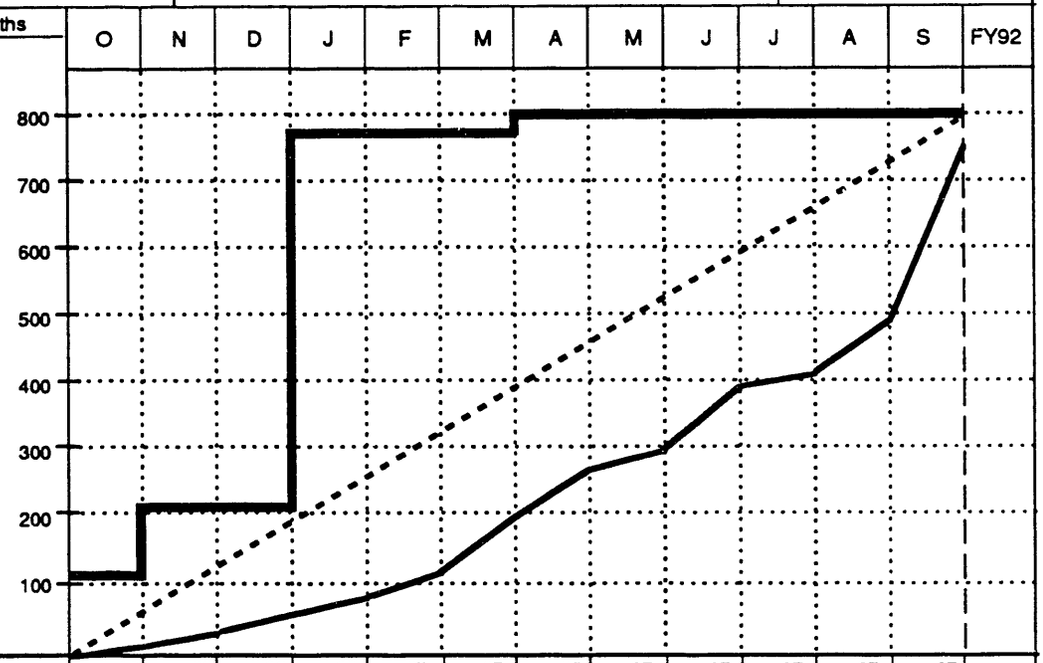
d. Actual Costs Prior Years: 1504

e. FY Budget: 800 (a)

f. Total Budget:

g. FY Funds Auth.: 800 (b)

h. Total Funds Auth.: 2,304 (c)



		O	N	D	J	F	M	A	M	J	J	A	S
Costs	i. Planned	66	66	66	66	67	67	67	67	67	67	67	67
	j. Actual (d)	14	23	9	31	40	80	57	39	97	20	80	258
	k. Variance	52	43	57	35	24	-13	10	28	-30	47	-13	-191
	l. Cum Planned	66	132	198	264	331	398	465	532	599	666	733	800
	m. Cum Actual (d)	14	37	46	77	117	197	254	293	390	410	490	747
	n. Cum Variance	52	95	152	187	214	201	211	239	209	256	243	53

10. Legend: Planned - - - - - Actual ——— Funds Auth. ▬▬ 90% Funds Spent ▷ Time Now

(a) $800K = $725K for the TSP; $40K of TSP carryover; and $35K for service assessment. (b) Includes carryover and the TSP's share of current fiscal year funding that has been received. (c) FY88-91. (d) Actual costs are booked after invoices are received and processed. Therefore, current month costs may not reflect actual work performed.

11. Name/Signature of Participants Prog/Proj Manager & Date

D. B. SHIPLER

FIGURE A.2. Technical Steering Panel Budget Status

Appendix B

Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project - Placed in the DOE Public Reading Room During September 1991

Appendix B

Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project Placed in the DOE Public Reading Room During September 1991

BNWL-SA-3939	Modeling of Environmental Pathways and Radiation Doses from Nuclear Facilities. 33 p.	10/13/71
•DUH-10159	Radioactive Contamination of the River Resulting from the Discharge of Cooling Water Into It. 3 p.	03/29/43
•DUH-12344	Effluent Water-105-B Building. 1 p.	11/28/44
•FTS-CLVI-258	Production Summary 100 Areas September 1944 Through December 1960 Recap. 102 p.	01/29/58
•FTS-XX-0179	Metal History and Percent Record (continuation of FTS-XX-71). 300 p.	01/01/48
•FTS-XX-0311	Metal History and Percent Record (continuation of FTS-XX-179). 300 p.	04/26/49
•FTS-XX-1658	T-Plant Percent Book (1953-1955). 152 p.	08/10/56
*HEW-0288-T	Technical Notebook-Personal Notes and Observations. 38 p.	01/25/45
*HW-7-5852	H.E.W. Production Report Week Ending February 23, 1947. 2 p.	02/24/47
*HW-7-6184-DEL	Hanford Engineer Works Monthly Report April 1947. 168 p.	05/12/47
*HW-7-6391	Hanford Engineer Works Monthly Report May 1947. 162 p.	06/13/47
*HW-07096-DEL	Hanford Engineer Works Monthly Report June 1947. 173 p.	07/15/47
*HW-07283-DEL	Hanford Engineer Works Monthly Report July 1947. 187 p.	08/13/47
*HW-07378-DEL	Hanford Engineer Works Technical Progress Letter No. 164. 11 p.	08/28/47
*HW-07504-DEL	Hanford Engineer Works Monthly Report August 1947. 183 p.	09/17/47
•HW-07565-DEL	Hanford Engineer Works Technical Progress Letter No. 167. 10 p.	09/18/47

Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project - Placed in the DOE Public Reading Room During September 1991

*HW-07795-DEL	Hanford Works Monthly Report September 1947. 201 p.	10/15/47
*HW-07997-DEL	Hanford Works Monthly Report October 1947. 207 p.	11/18/47
*HW-08267-DEL	Hanford Works Monthly Report November 1947. 213 p.	12/17/47
*HW-08438-DEL	Hanford Works Monthly Report December 1947. 223 p.	01/21/48
*HW-08931-DEL	Hanford Works Monthly Report January 1948. 239 p.	02/20/48
*HW-09191-DEL	Hanford Works Monthly Report February 1948. 150 p.	03/23/48
•HW-09201-DEL	Hanford Works Technical Progress Letter No. 193. 13 p.	03/18/48
*HW-09595-DEL	Hanford Works Monthly Report March 1948. 238 p.	04/26/48
•HW-09708	Hanford Works Technical Progress Letter No. 200. 12 p.	05/06/48
•HW-09910-DEL	Hanford Works Technical Progress Letter No. 203. 9 p.	05/27/48
*HW-09922-DEL	Hanford Works Monthly Report April 1948. 255 p.	05/28/48
*HW-10166-DEL	Hanford Works Monthly Report May 1948. 263 p.	06/21/48
•HW-10395-DEL	Process and Operating Improvements for the Second Quarter of 1948. 7 p.	07/12/48
•HW-10647-DEL	Hanford Works Technical Progress Letter No. 213. 9 p.	08/05/48
HW-12121-DEL	Hanford Works Technical Progress Letter No. 236. 8 p.	01/13/49
•HW-12736-DEL	Hanford Works Technical Progress Letter No. 245. 7 p.	03/17/49

Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project - Placed in the DOE Public Reading Room During September 1991

•HW-12799-DEL	Hanford Works Technical Progress Letter No. 246. 8 p.	03/24/49
*HW-13793-DEL	Hanford Works Monthly Report June 1949. 275 p.	07/18/49
*HW-14043-DEL	Hanford Works Monthly Report July 1949. 272 p.	08/18/49
•HW-14275-DEL	Hanford Works Technical Progress Letter No. 249. 11 p.	08/31/49
*HW-14338-DEL	Hanford Works Monthly Report August 1949. 284 p.	09/19/49
*HW-14596-DEL	Hanford Works Monthly Report September 1949. 279 p.	10/18/49
*HW-14916-DEL	Hanford Works Monthly Report October 1949. 298 p.	11/18/49
•HW-15224-DEL	Hanford Works Technical Progress Letter No. 265. 9 p.	12/01/49
*HW-15267-DEL	Hanford Works Monthly Report November 1949. 298 p.	12/16/49
•HW-15686-DEL	Hanford Works Technical Progress Letter No. 268. 9 p.	01/16/50
*HW-17056-DEL	Hanford Works Monthly Report February 1950. 321 p.	03/20/50
*HW-17410-DEL	Hanford Works Monthly Report March 1950. 345 p.	04/20/50
*HW-17660-DEL	Hanford Works Monthly Report April 1950. 353 p.	05/19/50
•HW-17679	Hanford Works Technical Progress Letter for April 1950. 12 p.	05/04/50
•HW-17864-DEL	P-10 Radiation Hazards. 4 p.	05/22/50
•HW-17906-DEL	Progress Report for April 1950 Process Section, Separations Technology Division.	05/24/50
•HW-19301-DEL	Technical Progress Letter for October 1950. 15. p.	11/06/50
•HW-20381-DEL	Technical Progress Letter for February 1951. 15 p.	03/06/51

Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project - Placed in the DOE Public Reading Room During September 1991

•HW-24832-DEL	Technical Activities Report Pile Physics. 16 p.	07/10/52
•HW-25052-DEL	Technical Activities Report Pile Physics. 14 p.	08/10/52
•HW-29792-RD	Processing Capacity of the PUREX Plant. 12 p.	11/03/53
•HW-30507-RD	A Review of the PUREX Plant Capacity. 6 p.	01/11/54
•HW-33524-RD	Disposal of Irradiated Waste "INK" Solution (Production Test 105-529-A) Supplementary Work Sheets for Document HW-33524. 45 p.	07/08/55
•HW-33722	High U^{237} Level in REDOX Feed Occurring October 27, 1954. 2 p.	11/09/54
•HW-40560-DEL	Variables in Hanford Reactor Production After Water Plant Expansion. 8 p.	12/27/55
•HW-43556	Examination of Slugs from Ruptured Front Pigtail Incident at C-Pile. 18 p.	07/23/56
HW-49120	Summary of REDOX Experience. 22 p.	03/19/57
•HW-55234-DEL	Neptunium-237 in Hanford Processes. 4 p.	03/06/58
•HW-56352-DEL	Discussion of Failure Rates. 20 p.	04/02/56
•HW-58561	Partially Dissolved Fuel Slugs from REDOX Dissolvers. 8 p.	01/13/59
•HW-60699	Estimate of Gamma Dose Rates from 1000 MWD/T and 2000 MWD/T Plutonium. 10 p.	06/22/59
HW-80558	Ground Water Travel Time Calculations for the 1301-N Crib. 14 p.	07/30/64
PNL-7430	Contaminated Materials Treatment Program Annual Report for FY 1989. 34 p.	08/13/90
PNL-SA-19007	Localized Beta Dosimetry of ^{131}I in Human Thyroid. 13 p.	06/12/91

•Declassified by Secretary of Energy Watkins' directive.
*Declassified in 1991 by earlier guidance.

Appendix C

HEDR Documents to the TSP

Note: This appendix shows a complete list of HEDR documents that were provided to the TSP since January 1989.

Appendix C

HEDR Documents to the TSP - FY 1991

Title	Author	Date Issued	Publication No.	Additional Information	Status
Proposed Approach for Developing Information on Population Food Consumption and Lifestyles of Native Americans in the HEDR Study Area	RE Rhoads/ CL Bruneau	89/01	PNL-6803 HEDR	Working document	TSP comments were incorporated/PNL-6834 HEDR
Demographic, Agricultural, Food Consumption, and Lifestyle Research for the Hanford Environmental Dose Reconstruction Project	DM Beck et al.	89/02	PNL-6834 HEDR	Incorporates earlier TSP comment	TSP received 33/89, no written response provided to PNL
Response to TSP Directive 88-4, Ground-Water Contamination Data	MD Freshley	89/03	PNL-6847 HEDR		TSP received 3/89, no written response provided to PNL
Summary Report of HEDR Workshop on Sensitivity and Uncertainty Analysis	B. Sagar/ AM Liebetrau	89/03	PNL-SA-16804 HEDR	Summary of workshop 1/16-18/89	Sent to Till 3/89 no written response provided to PNL
Feasibility of Using ^{129}I Concentrations in Human Tissue to Estimate Radiation Dose from ^{131}I	WD McCormack	89/04	PNL-6889 HEDR	TSP approved 9/89	Published final 1989
Summary of Workshop on Milk Production and Distribution, November 30, 1988-HEDR Project	DM Beck et al.	89/07	PNL-6975 HEDR		To TSP 8/89
Estimations of Traditional Native American Diets in the Columbia Plateau	ES Hunn/ CL Bruneau	89/08	PNL-SA-17296		Reviewed by tribes

Title	Author	Date Issued	Publication No.	Additional Information	Status
Preliminary Summaries for Vegetation, River and Drinking Water and Fish Radionuclide Concentration Data (DRAFT)	RK Woodruff	89/11	PNL-SA-17641 HEDR		PNL addressing TSP comments
The Hanford Environmental Dose Reconstruction Project: Background Information	SJ Byram	89/12	PNL-SA-17658 HEDR	For use with focus groups	TSP approval not required
Work Plan for the Hanford Environmental Dose Reconstruction Project	HA Haerer	89/12	PNL-6696 HEDR Rev. 1	TSP approved 12/89	Published final 12/89
Milk Cow Feed Intake and Milk Production and Distribution Estimates for Phase I	DM Beck	89/12	PNL-7227 HEDR		PNL addressing TSP comments
Selection of Dominant Radionuclides for Phase I of the HEDR Project	BA Napier	89/12	PNL-7231 HEDR	TSP approved 6/91	Published final 7/91
Soil Ingestion by Dairy Cattle	RF Darwin	90/02	PNL-SA-17918 HEDR		For possible use later in project
Population Estimates for Phase I	DM Beck et al.	90/02	PNL-7263 HEDR		PNL addressing TSP comments
Estimates of Food Consumption	JM Callaway	90/02	PNL-7260 HEDR		PNL addressing TSP comments
QA Audit Report of the HEDR Project-Data Traceability, A-90-15	RC Pratt	90/07	PNL-7428 HEDR		No TSP comments
HEDR Project Plan - Pre-Decisional Draft	D. B. Shipler	90/10	PNL-7515 HEDR	Superseded by PNL-7563 HEDR	
FY 1991 Project Plan for the HEDR Project, Phase II	HEDR Staff	90/11	PNL-7563 HEDR	Superseded by PNL-7563 HEDR Rev. 1	

Title	Author	Date Issued	Publication No.	Additional Information	Status
Assessment of FY 1991 Scope Limitations on Out-Year Activities	DB Shipler	90/12	PNL-7588 HEDR		To TSP 12/90
Effects of the Loss of Correlation Structure on Phase I Dose Estimates	JC Simpson	91/02	PNL-SA-191085	Milestone 0202C	PNL addressing TSP comments
I-131 in Irradiated Fuel at Time of Processing from December 1944 Through December 1947	CM Heeb/ LG Morgan	91/03	PNL-7253 HEDR	TSP approved 3/91	Published final 3/91
Initial Communication Survey Results for the HEDR Project	DM Beck	91/03	PNL-7423 HEDR	WSU omnibus survey of WA State	Published final 3/91
MESOILT2, A Lagrangian Trajectory Climatological Dispersion Model	JV Ramsdell	91/03	PNL-7340 HEDR	TSP Approved 3/91	Published final 3/91
Uncertainties in Source Term Calculations Generated by the ORIGEN2 Computer ORIGEN2 Computer Code for Hanford Production Reactors	CM Heeb	91/03	PNL-7223 HEDR	TSP approved 3/91	Published final 3/91
Radionuclide Sources and Radioactive Decay Figures Pertinent to the HEDR Project	CM Heeb	91/04	PNL-7177 HEDR	TSP approved 4/91	Published final 4/91
A History of Major Hanford Facilities and Processes Involving Radioactive Material	MY Ballinger/ RA Hall	91/04	PNL-6964 HEDR	TSP approved 4/91	Published final 4/91
Evaluation of Thyroid Radioactivity Measurement Data From Hanford Workers, 1944-1946	TA Ikenberry	91/04	PNL-7254 HEDR	TSP approved 4/91	Published final 4/91

Title	Author	Date Issued	Publication No.	Additional Information	Status
Project Summary Schedule	DB Shipler	91/04	PNL-7685 HEDR	Available from TSP	To TSP 04/91
A Preliminary Examination of Audience Related-Related Communications Issues: Hanford Environmental Dose Reconstruction Project	CW Holmes	91/04	PNL-7321 HEDR	TSP approved 4/91	Published final 4/91
FY 1991 Task Plans for the Hanford Environmental Dose Reconstruction Project	HEDR Staff	91/04	PNL-7563 HEDR Rev. 1	TSP approved 4/91; supersedes PNL-7563 HEDR	Published final 4/91
Document Search and Declassification for Phase I of the HEDR Project	DB Shipler et al.	91/05	PNL-7713 HEDR	Letter to J. Till, available from TSP	TSP approval not necessary
Summary of Literature Review of Risk Communication	SJ Byram	91/05	PNL-7226 HEDR	TSP approved 4/91	Published final 5/91
Estimates of Columbia River Radionuclide Concentrations: Data for Phase Dose Calculations	MC Richmond/ WH Walters	91/05	PNL-7248 HEDR	TSP Approved 4/91	Published final 5/91
Fission-Product Iodine During Early Hanford-Site Operations: Its Production and Behavior During Fuel Processing, Off-Gas Treatment, and Release to the Atmosphere	LL Burger	91/05	PNL-7210 HEDR	TSP approved 4/91	Published final 5/9
Information Resources Task Management Plan	DB Shipler/ SP Gydesen	91/06	PNL-7719 HEDR		TSP approval not necessary; for information only
Dose Estimate Variability Caused by Air Model Uncertainties	JC Simpson	91/06	PNL-7737 HEDR		To TSP 6/91 for review

Title	Author	Date Issued	Publication No.	Additional Information	Status
Computational Model Design Specification for Phase I of the Hanford Environmental Dose Reconstruction Project	BA Napier	91/07	PNL-7274 HEDR	TSP approved	Published final 7/91
Columbia River Pathway Report	HEDR Staff	91/07	PNL-7411 HEDR Rev. 1	Presents Phase 1 results	Approved by TSP and published final 7/91
FY 1995 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shipler	91/07	PNL-7761 HEDR	To TSP for review 7/91	
Air Pathway Report	HEDR Staff	91/07	PNL-7412 HEDR Rev. 1	Presents Phase I results	Approved by TSP and published final 7/91
FY 1994 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shipler	91/07	PNL-7759 HEDR		To TSP for review 7/91
Atmospheric Transport and Dispersion Modeling for the Hanford Environ-mental Dose Reconstruction Project	JV Ramsdell	91/07	PNL-7198 HEDR	Published final 7/91	TSP approved 7/91
Atmospheric Transport Modeling and Input Data for Phase I of the Hanford Environmental Dose Reconstruction Project	JV Ramsdell/ KW Burk	91/07	PNL-7199 HEDR	TSP approved 7/91	Published final 7/91
Summary Report	HEDR Staff	91/08	PNL-7410 HEDR Rev. 1	Presents Phase I results	Approved by TSP and published final 8/91
FY 1992 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shipler	91/10	PNL-7757 HEDR		To TSP for review and approval

Title	Author	Date Issued	Publication No.	Additional Information	Status
FY 1993 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shipler	91/10	PNL-7760 HEDR		To TSP for review and approval
Hanford Environmental Dose Reconstruction Project Monthly Report	HEDR Project Office	Ongoing	PNL-6450 HEDR	Cleared one/time documentation	Periodic report

Appendix D

HEDR Presentation Handouts to the TSP

Note: This appendix shows a complete list of HEDR presentation handouts that were provided to the TSP since November 1988.

Appendix D

HEDR Presentation Handouts to the TSP - To Date

Title	Author	Date Issued	Publication No.	Additional Information
Estimated Quantity of ^{131}I Contained in Irradiated Fuel at Time of Fuel Processing, CY 1944-1945	PO Jackson/ LG Morgan	88/11	PNL-SA-16398 HEDR	Presented at TSP mtg., 11/11-12/88 Olympia WA
Aspects of Sensitivity/Uncertainty Analysis in the HEDR Project	B. Sagar	89/01	PNL-SA-16571 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
HEDR Demography, Agriculture, and Lifestyle Research	DM Beck	89/01	PNL-SA-16568 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Purpose of Workshop	D. Gilbert	89/01	PNL-SA-16569 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Source Terms	LG Morgan	89/01	PNL-SA-16566 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Example of Sensitivity/Uncertainty Analysis	DL Strenge	89/01	PNL-SA-16570 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Surface Water Transport Uncertainty	WH Walters	89/01	PNL-SA-16572 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Atmospheric Pathway	JV Ramsdell	89/01	PNL-SA-16565 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis
Experience with Gress and Swats	MG Piepho	89/01	PNL-SA-16567 HEDR	Presented at HEDR workshop on Sensitivity & Uncertainty Analysis

Title	Author	Date Issued	Publication No.	Additional Information
Availability of I-131 Vegetation Data	KR Price	89/01	PNL-SA-16573 HEDR	Presented at HEDR workshop on Sensitivity and Uncertainty Analysis
Hanford Environmental Reconstruction Project - Report to the TSP	HA Haerer	89/03	PNL-SA-16794 HEDR	Presented at TSP mtg., 3/17/89 Spokane WA
HEDR Native American Population, Food Consumption and Lifestyle Study - Data Requirements	CL Bruneau	89/03	PNL-SA-16784 HEDR	Presented at Native American Workshop, 3/14-15/8
Task 6 - Population, Food Consumption and Lifestyles	RE Rhoads	89/03	PNL-SA-16785 HEDR	Presented at Native American Workshop, 3/14-15/89
HEDR Project Report to the TSP for May 1989 Public Meeting	HA Haerer	89/05	PNL-SA-17032 HEDR	Presented at TSP mtg., 5/18-20/89 Toppenish WA
Defining Demographic Categories for Phase I	BA Napier/ DM Beck	89/05	PNL-SA-17035 HEDR	Presentation handout TSP mtg., 5/18-20/89 Toppenish, WA
HEDR Project Report to the TSP for July 21, 1989	HA Haerer	89/07	PNL-SA-17218 HEDR	Presented at TSP mtg., 7/21/89 Richland WA
Radionuclides Transported by the Columbia River	MD Freshley	89/07	PNL-SA-17235 HEDR	Presented at TSP mtg., 7/21/89 Richland WA
Methods for Presenting Results to the Public	RE Rhoads	89/08	PNL-SA-17368 HEDR	Presented at TSP mtg., 9/6/89 Portland OR
Surface Water Exposure Pathways	BA Napier/ TM Poston	89/10	PNL-SA-17502 S HEDR	Presented at TSP mtg., 10/12-14/89 Portland OR

Title	Author	Date Issued	Publication No.	Additional Information
Discussion with TSP Subcommittee on Communication Strategy	RE Rhoads	89/10	PNL-SA-17475 HEDR	Presented at TSP Subcommittee mtg., Oct. 89 Portland
HEDR Project Report to the TSP	HA Haerer	89/10	PNL-SA-17501 HEDR	Presented to TSP mtg., 10/12-14/89 Portland OR
Atmospheric Transport Modeling	MD Freshley	89/12	PNL-SA-17662 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Preliminary Calculated and measured Concentrations of Iodine-131 in Vegetation for Phase I	BA Napier	89/12	PNL-SA-17674 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Phase II Planning	HA Haerer	89/12	PNL-17661 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Environmental Monitoring Data: Vegetation, 1945-1947	RK Woodruff	89/12	PNL-SA-17671 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Overview of Project Model - Surface-Water Pathway	BA Napier	89/12	PNL-SA-17672 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Surface-Water Pathway	MD Freshley	89/12	PNL-SA-17660 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Environmental Measurements - Columbia River	TM Poston/ R. Dirkes	89/12	PNL-17669 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Milk Production and Distribution	DM Beck	89/12	PNL-SA-17649 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Source Terms - Air Pathway Source Terms - Surface-Water Pathway	LG Morgan	89/12	PNL-SA-17657 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA

Title	Author	Date Issued	Publication No.	Additional Information
Overview of Project Model - Surface-Water Pathway	BA Napier	89/12	PNL-SA-17673 HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Preliminary Evaluation of Thyroid Bioassay Data from Hanford Workers, 1944-1946	TA Ikenberry/ BA Napier	89/12	PNL-SA-17670 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Communications Directive	RE Rhoads	89/12	PNL-SA-17653 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Hanford Environmental Dose Reconstruction Project	HA Haerer	89/12	PNL-SA-17661 S HEDR	Presented at TSP mtg., 12/11-13/89 Richland WA
Communications Directive	RE Rhoads	90/02	PNL-SA-17903 S HEDR	Presented at TSP mtg., 2/15-17/90 Richland WA
HEDR Project Report to the TSP	HA Haerer	90/02	PNL-SA-27904 S HEDR	Presented at TSP mtg., 2/15-17/90 Richland WA
Detailed Example Calculations for HEDR, Phase I	BA Napier	90/02	PNL-SA-17913 HEDR	Presented at TSP mtg., 2/15-17/90 Richland WA
Hanford Environmental Dose Reconstruction Project - Phase I Report	HA Haerer	90/05	PNL-18304 S HEDR	Presented at workshop "Public Health Aspect of Hanford Health Studies" 6/6/90
Uncertainty Analysis	JC Simpson	91/01	PNL-SA-18948 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA
Status of TSP Directive 89-9	R. Cuello	91/01	PNL-SA-18962 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA
Dose Model and Parameter Restructuring	TA Ikenberry	91/01	PNL-SA-18957 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA
Preliminary Response to the FY 1991 Project Plan	DB Shipler	91/01	PNL-SA-18981 HEDR	Presented at the TSP mtg., 1/11/91 Pasco WA
Atmospheric Model Restructuring	JV Ramsdell	91/01	PNL-SA-18956 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA

Title	Author	Date Issued	Publication No.	Additional Information
Application of Geographical Information System to the HEDR Project	JG Stephan	91/01	PNL-SA-18958 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA
Phase I Dose Estimates for the Kalispel Tribe	TA Ikenberry	91/02	PNL-SA-19098 A HEDR	Presented to Kalispel Tribal Council, 2/5/91 Usk WA
Project Model and Analysis and Restructuring	BA Napier	91/01	PNL-SA-18955 S HEDR	Presented at TSP mtg., 1/11/91 Pasco WA
Long-Range Project Plan	DB Shipler	91/01	PNL-SA-18949 S HEDR	Presented at TSP mtg., 1/11/91, Pasco WA
Information for the HEDR Planning Workshop - 2/14-16/91	DB Shipler	91/02	PNL-SA-19108 S HEDR	Presented at TSP Workshop, 2/14-16/91, Seattle WA
Process for Estimating Doses to the Coeur d'Alene Tribe	TA Ikenberry	91/03	PNL-SA-19204 S HEDR	Presented to Coeur d'Alene Tribal Council 2/28/91
Status of Technical Work - Hanford Environmental Dose Reconstruction Project	BA Napier et al.	91/04	PNL-SA-19356 HEDR	Presented at TSP mtg., 4/3/91, Lewiston ID
Battelle Status of Technical Work, Hanford Environmental Dose Reconstruction Project	DB Shipler et al.	91/07	PNL-SA-19752 S HEDR	Presented at the TSP mtg., 7/10-13/91 Pasco WA
HEDR Project-Invoice Process and Procedures	SM Finch	91/09	PNL-SA-1994 S HEDR	Presented at NAWG mtg., 9/91, Pasco WA

Appendix E

HEDR Open Literature Publications and Presentations

Note: This appendix lists publications that present aspects of dose reconstruction in the open scientific literature; TSP approval is not required. A complete listing since April 1988 is included here.

Appendix E

HEDR-Related Publications

Title	Author	Date Issued	Publication No.	Audience	Status
Estimating Atmospheric Dispersion for Reconstruction of Doses from Hanford Operations	JV Ramsdell	88/04	PNL-SA-16767 HEDR	69th Annual Mtg. of the Pacific Division of the American Assoc. for the Advancement of Science	Presented 6/88 Corvallis OR
Potential Applications of Geographical Information Systems for Analyzing Hanford Environmental Dose Reconstruction Data	JG Stephan et al.	89/03	PNL-SA-16767 HEDR	Regional Symposium on HPS Computer Applications in Health Physics	Presented 3/89 Richland WA
The Hanford Environmental Dose Reconstruction Project: The Role of Applied Sociology	DM Beck	89/04	PNL-SA-16880 HEDR	Pacific Sociological Assoc. Mtg.	Presented 4/89 Reno NV
Temporal Variations in Atmospheric Dispersion at Hanford	JV Ramsdell	89/09	PNL-SA-17375 HEDR	Hanford Symposium on Health & the Environment	Presented 10/89 Richland WA
The Hanford Environmental Dose Reconstruction Project: Overview	HA Haerer et al.	89/09	PNL-SA-16859 HEDR	Hanford Symposium on Health & the Envirironment	Presented 10/89 Richland WA
The Hanford Environmental Dose Reconstruction Project: Technical Approach	BA Napier et al.	89/09	PNL-SA-16874 HEDR	Hanford Symposium on Health & the Environment	Presented 10/89 Richland WA
The Identification of Terrain-Induced Circulations Using Principal Components	ED Skyllingstad/ M Schwartz	89/10	PNL-SA-17164 HEDR	American Meteorological Soc. 10/89	Presented 10/89 Monterey CA

Title	Author	Date Issued	Publication No.	Audience	Status
Mathematical and Statistical Aspects of Reconstructing Doses to Individuals Living Near the Hanford Site Since the 1940s	AM Liebetrau et al.	89/10	PNL-SA-17498 HEDR	SIAM Conference on Applied Probability in Science and Engineering	Presented 3/90 New Orleans LA
Sensitivity and Uncertainty Analysis for Environmental Dose Reconstruction	B Sagar et al.	89/11	PNL-SA-17586 A HEDR	Workshop on Uncertainty Analysis Nov 89	Presented 11/89 Santa Fe NM
Uncertainty Analysis of the Conversion Factor for Historic Iodine-131 Gross Beta Vegetation Measurements	DL Strenge et al.	89/12	PNL-SA-17713 HEDR	1990 Health Physics Society. Mtg	Presented 6/90 Anaheim CA
Reconstruction of Hanford Vegetation Monitoring Data for Dose Reconstruction for 1945-1947	RK Woodruff/ E. Mart/ RW Hanf	90/01	PNL-SA-17760 A HEDR	1990 Health Physics Society mtg	Presented 6/90 Anaheim CA
Statistical Aspects of Reconstructing the I-131 Dose to the Thyroid Disease Study	RO Gilbert et al.	90/03	PNL-SA-17384	Workshop: Statistics of Human Radiation Exposure to Ionizing Radiation	Presented 4/90 Oxford UK
GENII - Hanford Environmental Dosimetry Package	BA Napier et al.	90/07	PNL-SA-18478	ANS 1990 Winter Meeting	Presented 11/90
Atmospheric Modeling for Dose Reconstruction at Hanford	V. Ramsdell/ K. Burk	90/07	PNL-SA-18487 A	ANS Winter Meeting	Presented 11/90
Statistical Aspects of the Hanford Environmental Dose Reconstruction Project and the Hanford Thyroid Disease Study	RO Gilbert et al.	90/07	PNL-SA-18396 HEDR	American Statistical Assoc. Conference on Radiation and Health	Presented 7/90 Copper Mountain CA

Title	Author	Date Issued	Publication No.	Audience	Status
A Multi-Method Approach to Audience Analyses in Developing Comprehensive Public Communications Programs	C Holmes/ S Byram/D Von Winterfelt	90/10	PNL-SA-18676 HEDR	Society for Risk Analyses 1991	Presented 10/90 New Orleans LA
Providing Information Resources for the Hanford Environmental Dose Reconstruction Project	SP Gydesen	91/01	PNL-SA-19079 A HEDR	ANS 1991 Annual Meeting	Presented 6/91
Overview of Hanford Environmental Dose Reconstruction Project	DB Shipler	91/01	PNL-SA-19078 A HEDR	ANS 1991 Annual Meeting	Presented 6/91
Developing Milk Industry Estimates for Dose Reconstruction Projects	DM Beck	91/02	PNL-SA-19172 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Native American Food Consumption Data Collection	CL Bruneau	91/02	PNL-SA-19174 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Developing Population Estimates for Dose Reconstruction Projects	DM Beck	91/02	PNL-SA-19173 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Effects of the Loss of Correlation Structure on Dose Estimates	JC Simpson	91/02	PNL-SA-19115 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Hanford Environmental Dose Reconstruction: A Public Communications Effort Toward Credibility, Under-standing and Independence	GL Harvey	91/02	PNL-SA-19118 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Developments in Atmospheric Modeling for Dose Reconstruction at Hanford	JV Ramsdell	91/02	PNL-SA-19116 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
The Estimation of Early Hanford Releases of Iodine-131	CM Heeb et al.	91/03	PNL-SA-19321 A HEDR	ANS 1991 Annual Meeting	Presented 6/91
Reconstruction of Radionuclide Movement in Ground Water at the Hanford Site	MD Freshley/ PD Thorne	91/03	PNL-SA-19269 S HEDR	ANS 1991 Annual meeting	Presented 6/91

Title	Author	Date Issued	Publication No.	Audience	Status
Initial Findings of the Hanford Environmental Dose Reconstruction Project	TA Ikenberry/ BA Napier	91/03	PNL-SA-19251 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Integration of Models for the Hanford Environmental Dose Reconstruction Project	BA Napier	91/03	PNL-SA-19252 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Application of a Geographic Information System to the HEDR Project	DB Shipler et al	91/05	PNL-SA-19487 A HEDR	Society of Environmental Toxicology and Chemistry	Will be presented 11/9
Communicating Risk to Non-Scientific Audiences: Misconceptions and Guidelines	RE Lundgren/ AH McMakin	91/05	PNL-SA-19488 A HEDR	Society of Environmental and Toxicology and Chemistry	Will be presented 11/91
Overview of the HEDR Project	DB Shipler et al.	91/10	PNL-SA-20021 HEDR	1992 International High-Level Waste Conference	To be presented 4/92
Overview of the HEDR Project	DB Shipler	91/10	PNL-SA-20022 A HEDR	Society of Environmental Toxicological Chemistry	Will be presented 11/91
Recovery and Evaluation of Historic Environmental Monitoring Data at Hanford	RL Dirkes	91/02	PNL-SA-19119 S HEDR	ANS 1991 Annual Meeting	Presented 6/91
Sensitivity of the MESOILT2 Dispersion Model to Input Uncertainty	JV Ramsdell	91/01	PNL-SA-19117 S HEDR	ANS 1991 Annual Meeting	Presented 6/91

Appendix F

Communications Log - September 1991

Appendix F

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Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
DB Shipler/PNL	JS Stohr/TSP Staff	Phone	Native American support cost estimates
DB Shipler/PNL	RF Brich/RL	Phone	HEDR budget for FY 92 & 93
DB Shipler/PNL	WA Bishop/TSP	Phone	Native American support cost estimates
DB Shipler/PNL	MJ Sage/CDC	Phone	HEDR budget; contract schedule
B Shleien/TSP	DB Shipler/PNL	Phone	I-131 data for validation; milestones
DB Shipler/PNL	JE Till/TSP	Phone	Priorities on declassification; escort for 712 bldg.
B Shleien/TSP	DB Shipler/PNL	Phone	Reviewed milestones for FY92; potential carryover
B Shleien/TSP	DB Shipler/PNL	Phone	Support for bibliography development
DB Shipler/PNL	B Smith/CDC	Phone	CDC procurement schedule and options
RF Brich/RL	DB Shipler/PNL	Phone	Student questions on HEDR
V Pierre/Kalispel Tribe	SM Finch/PNL	Phone	Room reservations for the Native American Working Group (NAWG) meeting 9/23/91
B Aripa/Colville Tribe	SM Finch/PNL	Phone	Workshop agreement and agenda for 9/23/91 NAWG meeting
R Juneau/Coeur d'Alene Tribe	SM Finch/PNL	Phone	NAWG agenda
B Van Pelt/Umatilla Tribe	SM Finch/PNL	Phone	Workshop agreement and rooms for NAWG meeting
DE Walker/TSP	SM Finch/PNL	Phone	Status of invoice payment and subcontract supplement
SM Finch/PNL	K CharLee/TSP Staff	Phone	Location of Walla Walla meeting for tribal workshop agreements
K CharLee/TSP Staff	SM Finch/PNL	Phone	Meeting to prepare for NAWG meeting

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Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
JS Stohr/TSP Staff	SM Finch/PNL	Phone	Request for tribal cost/budget
SM Finch/PNL	DE Walker/TSP	Phone	Expenses on invoices
DE Walker/TSP	SM Finch/PNL	Phone	Status of invoice
JM Daer/PNL	K CharLee/TSP	Phone	Request for resumes
SM Finch/PNL	RL Morrill/TSP	Phone	Question on invoice
J Berger/Philadelphia	SM Finch/PNL	Phone	Request for copies of HEDR-related publications
SM Finch/PNL	V Pierre/Kalispel Tribe	Phone	Request for FY 1991 accrual information
MJ Sage/CDC	SM Finch/PNL	Phone	Reschedule meeting on HEDR records requirements
JS Stohr/TSP Staff	SM Finch/PNL	Phone	Request for no-cost time extensions through 12/31/91 for Yakima, Colville, Nez Perce, Umatilla, and Kalispel tribes
SM Finch/PNL	PC Kingeman/TSP	Phone	Request for accrual information
SM Finch/PNL	A Peters/Yakima Indian Nation	Phone	Request for accrual information
SM Finch/PNL	E Oldfield/Colville Tribe	Phone	Request for accrual information
B Shleien/TSP	SM Finch/PNL	Phone	Schedule meeting, scope of work for new TSP member P McGavran, status of payments
K Millpointer/T Fould/ representing downwinders	SM Finch/PNL	Phone	Request for source term resumes
D Seylor/Coeur d'Alene Tribe	SM Finch/PNL	Phone	Receipt of technical submittal
W Hanson/Yakima Indian Nation	SM Finch/PNL	Phone	Invoice questions

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JM Daer/PNL	RL Morrill/TSP	Phone	New phone and fax numbers
MA Robkin/TSP	SP Gydesen/PNL	Phone	Visit to review classified documents
MA Robkin/TSP	SP Gydesen/PNL	Phone	Confirm visit to review classified documents
ML Blazek/TSP	SP Gydesen/PNL	Phone	Request for copy of HW-32467
MA Robkin/TSP	SP Gydesen/PNL	Phone	Results of classified document review of S Davis
NJ Germond/TSP	SP Gydesen/PNL	Phone	Status of HEAL-requested document review
GL Harvey/PNL	ML Blazek/TSP	Phone	Progress on TSP video and survey
GL Harvey/PNL	K Niles/TSP Staff	Phone	Progress on TSP video and survey
K Niles/TSP Staff	GL Harvey/PNL	Phone	TSP videotape progress
K Niles/TSP Staff	GL Harvey/PNL	Phone	TSP videotape approval and duplication
GL Harvey/PNL	ML Blazek/TSP	Phone	Requested copy of DOE Notice 5491.2 regarding public information practices
GL Harvey/PNL	M Power/TSP Staff	Fax	Sent copy of DOE Notice
GL Harvey/PNL	ML Blazek/TSP	Fax	Revised copy of task plan, Task 12
GL Harvey/PNL	M Power/TSP Staff	Fax	Task plan, Task 12
MA Robkin/TSP	CM Heeb/PNL	Fax	Draft letter to HEAL
K Millpointer/Hanford downwinders	CM Heeb/PNL	Phone	Staff biographies
CA Heeb/PNL	MA Robkin/TSP	Phone and Fax	Draft letter to HEAL
MA Robkin/TSP	CM Heeb/PNL	Phone and Fax	Draft letter to HEAL
D Baldonado/TSP Staff	AH McMakin/PNL	Phone	Phase I Summary Report

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Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
DS Barth/TSP	TA Ikenberry/PNL	Phone	Progress on revised air pathway code, information needed for October TSP meeting
TA Ikenberry/PNL	GS Roessler/TSP	Phone	Age-dependent dose factors, status of prenatal dose factors, information for October TSP meeting

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