Hanford Environmental Dose Reconstruction Project

Monthly Report

October 1991

Prepared for the Technical Steering Panel

PNL-6450-48-HEDR

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**Pacific Northwest Laboratory
Richland, Washington 99352**

MASTER

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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.

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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)

		<u>Complete</u>	<u>Ongoing</u>	<u>Phase I</u>	<u>FY 1991</u>
88-1	(a) Proposals (b) Source Terms		x	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 October 1991:

- attended TSP meeting and TSP Subcommittee meetings in Walla Walla, Washington. HEDR staff presented progress on current work and plans for upcoming activities. Prior to the meeting, TSP member B. Shleien met with HEDR staff at PNL to discuss task plans, budgets, funding, contracts, and models. Battelle staff participation was reduced to enable only critical staff to attend when needed for discussions, presentations, or to answer questions; this approach will be used in future TSP meetings. HEDR work networks presented at TSP Subcommittee meetings were well received and will continue to be used by Subcommittee Chairs. The decision-aiding model was presented to select TSP members, who encouraged Battelle to use the process in presenting alternatives and their technical value to the TSP.
- published the TSP-approved FY 1992 and FY 1993 project task plans
- responded to the one observation from the July internal quality assurance (QA) audit of the HEDR Project. Responses included commitments to verify certain data and codes.
- received a deposition subpoena from the legal firms representing the downwinders in all Hanford legal suits. The subpoena requests all HEDR-related documents that have been identified; Battelle staff are being consulted to estimate potential costs, schedules, and impacts.
- began preparing a proposal for submittal to the Centers for Disease Control (CDC) to continue Battelle's HEDR work under contract to the CDC through February 1994. This proposal is a result of the 1990 agreement to transfer funding for DOE health-related studies from the DOE to the Department of Health and Human Services (DHHS). The CDC is part of the DHHS.
- submitted model and code descriptions to the International Atomic Energy Agency for initial model validation and began assembling a Hanford data set to be used in the validation exercise
- developed a method of defining peaking factor uncertainties that could be implemented in the source terms release model. This method will enable final computation of the 1944 - 1947 iodine-131 releases.
- identified daily reactor data through 1971, when the last single-pass Hanford reactor was shut down permanently
- initiated agricultural survey design for contributions to letter report on food consumption methodology
- completed milk model writeup for Ferry Stevens, and Okanogan counties
- met with staff from the Washington Department of Ecology, the CDC/Indian Health Service Public Health Practice Training Program, and the Hanford Thyroid Disease Study to discuss future integration of Native American work scopes and contracts
- modified an electronic spreadsheet to assist the Colville and Nez Perce tribes with data entry and calculation of food consumption, reviewed a draft survey form to be used by the Kalispel tribe to record food consumption and agricultural practices, and discussed data collection status with Yakima and Umatilla tribes
- declassified 22 Hanford-Site-originated documents, 16 of which are of potential interest/use to the project
- reviewed 40 documents held by General Electric attorneys in Seattle for relevance to the project. The two documents of potential use/interest to the project were placed in the U.S. Department of Energy Richland Field Office (RL) Public Reading room.

- presented information on HEDR to a Battelle Scientific Advisory Committee; the Society for Risk Assessment; and the USSR State Institute of Hydrometeorology, the USSR Academy of Sciences Radioecology Field Expedition to Chernobyl in Oranoe, and the Ukrainian Ministry of Health in Kiev

Problems or Changes and Action Taken

The PNL HEDR organization was realigned to focus on technical milestones.

Planned Work for the Next Three Months

- prepare proposal for CDC by the end of December for continuing Battelle HEDR work through February 1994
- submit the following milestones to the TSP:
 - Project Management Plan
 - Draft code design specifications
 - Documented Phase I iodine-131 releases
 - Documented significant airborne and waterborne radionuclides, 1944 - 57
 - Wind field modeling white paper
 - Atmospheric model documentation report
 - Report on air model sensitivity/uncertainty
 - Groundwater and Columbia River transport reports
 - Phase I reports on environmental monitoring data, population, food, and milk distribution estimates

- Vegetation data report
- Milk report addendum and letter report on milk outside Phase I
- Iodine-131 conversion factor report

Budget Status

Figure 2 shows the budget status of the HEDR Project. Table A.1 in Appendix A shows FY 1992 costs and budget by task and subtasks. Figure A.2 shows TSP budget status.

The TSP approved a budget for PNL, the TSP, and the Native American research contracts for FY 1992 for \$5,022K. Because the funding source for the HEDR Project transfers from DOE to the CDC in FY 1992, PNL is being funded in FY 1992 initially through DOE and then through CDC. DOE is funding PNL at 80% of the spending rate of the TSP-approved budget for October 1991 through February 1992. Therefore, PNL reduced its spending rate to the 80% level (plus carryover funding from FY 1991) for October 1991 through February 1992. The PNL budget (expected from CDC) for the remainder of FY 1992 (March through September 1992) was increased to ensure the full TSP budget to perform approved FY 1992 work. PNL assumes CDC will authorize this modified budget amount when the contract is signed between Battelle and CDC in February 1992.

Capital Status

A request for capital equipments funds to purchase additional storage space for the HEDR computer system will be prepared as soon as notification to do so is received from the Plans and Budget Department.

FIGURE 2. HEDR Project Budget Status - Pacific Northwest Laboratory

Contents

Preface	v
Executive Summary	vii
Project Summary	ix
Task 01 - PNL Project Management	1.1
Task 02 - Technical Integration	2.1
Task 03 - Source Terms	3.1
Task 04 - Environmental Transport	4.1
Task 05 - Environmental Monitoring Data	5.1
Task 06 - Demography, Food Consumption and Agriculture	6.1
Task 07 - Environmental Pathways and Dose Estimates	7.1
Task 08 - Statistics	8.1
Task 09 - Records Management	9.1
Task 10 - Quality Assurance	10.1
Task 11 - Information Resources	11.1
Task 12 - TSP Communications Support	12.1
Appendix A - Milestones, Schedule and Costs	A.1
Appendix B - Hanford Site-Originated Documents of Potential Interest/Use to the HEDR Project - Placed in the RL Public Reading Room During October 1991	B.1
Appendix C - HEDR Documents to the TSP - October 1991	C.1
Appendix D - HEDR Presentation Handouts to the TSP - October 1991	D.1
Appendix E - HEDR Open Literature Publications and Presentations - October 1991	E.1
Appendix F - Communications Log - October 1991	F.1

Figures

1	Organizational Structure of the Hanford Environmental Dose Reconstruction Project . . .	v
2	HEDR Project Budget Status - Pacific Northwest Laboratory	xi
A.1	HEDR Project Milestones	A.1
A.2	Technical Steering Panel Budget Status	A.9
A.3	Native American Research Budget Status	A.10

Tables

1	Status of Directives	vi
11.1	Declassification of Hanford-Originated Documents	11.2
A.1	Cost Summary	A.4

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 January 1992

- conducted an internal peer review of the HEDR Project Management Plan; comments are being addressed.

Other Activities

- briefed RL staff on the HEDR planning process and progress over the last year
- addressed and returned to Battelle Quality Assurance (QA) the response to the one observation from the internal QA audit. Response included commitments to verify all data hand-entered into the flat files and to verify all codes that are used to perform QA checks of data entered electronically.
- gave two presentations on HEDR: one to the Scientific Advisory Committee for DOE programs in the Office of Health and Environmental Research (OHER). The Committee is a Battelle-appointed external panel that advises on OHER work conducted by PNL for DOE. The other was to the Columbia-Cascade Chapter of the Society for Risk Assessment.
- received a deposition subpoena from the legal firms representing the downwinders in all of

the Hanford legal suits. It requests all HEDR-related documents that have been identified, including indexes and card files. Battelle information and legal staff are being consulted to estimate potential costs, schedules, and impacts to Battelle and the project.

- received the CDC comments on Battelle's preliminary outline for the proposal to continue Battelle's HEDR work under contract to the CDC; HEDR staff are now preparing the proposal.

Major Problem Areas or Changes and Action Taken

The PNL HEDR organization was realigned to focus effort on performance and completion of technical work and delivery of quality technical products.

Variance

The cumulative cost underrun was caused by less report production efforts than anticipated.

Planned Work for the Next Three Months

- Prepare and submit a proposal to CDC to continue HEDR work □

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, that technical task work is integrated effectively for performing the final dose calculations, and that quality technical products are produced to meet requirements.

Progress

Milestone 0202A - Draft Code Design Specifications, due April 1991 and rescheduled to January 1992

- submitted report to internal clearance

Milestone 0203B - Submit Hanford Scenario to VAMP, due December 1991

- submitted model and code descriptions to the International Atomic Energy Agency (IAEA) for the initial Validation of Models for Radionuclide Transfer in the Terrestrial, Urban, and Aquatic Environments (VAMP) scenario, along with proposals for additional VAMP scenario development. One of the proposals was accepted, and work has begun on assembling a Hanford data set to be used in international model validation efforts. The PNL model results for the first inter-comparison scenario were well within the range of other international models, and acceptably close to the actual measurements.

Other Activities

- presented details of the HEDR Project structure and techniques to the USSR State Institute of Hydrometeorology in Obninsk, the USSR Academy of Sciences Radioecology Field Expedition to Chernobyl in Oranoe, and the Ukrainian Ministry of Health in Kiev.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused by temporary unavailability of staff.

Planned Work for the Next Three Months

- complete draft code design specifications (Milestone 0202A)
- submit observations on first VAMP model inter-comparison exercise and prepare outline for VAMP Hanford Scenario (Milestone 0203B)
- begin preparing project data management plan (Milestone 0204A)
- support Native American Working Group meetings
- continue coordinating efforts with Hanford Thyroid Disease Study personnel
- 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

- with HEDR statistics staff, developed a method of defining peaking factor uncertainties that could be implemented in the release model with few, if any, changes. This will allow final computation of the 1944-1947 releases.

Milestone 0303A - Documented Significant Airborne Radionuclides, 1944-1957, and Milestone 0304A, Documented Significant Waterborne Radionuclides, 1944-1957, both due July 1991 and rescheduled to November 1991

- completed these letter reports and submitted them to internal clearance

Milestone 0307A - Letter Report, Hanford Operations, 1944-1960, due September 1992; Milestone 0307B - Letter Report: Hanford Operations, 1961-1991, due September 1992

- defined structure of the source term database that will receive production data now being gathered. This database will be the primary information source in reconstructing reactor and separations operations.

- identified daily reactor data through 1971, when the last single-pass Hanford reactor was shut down permanently, and continued efforts to obtain complete data covering separations operations

Major Problem Areas or Changes and Action Taken

Submittal of the Iodine-131 Source Terms Report to the HEDR Project Office will be delayed until December. To complete this work, the peaking factor calculation will be implemented in the Source Term Release Model, and the final numbers will be generated for the report. FY 1991 carryover funding is adequate to complete this milestone.

Variance

The cumulative cost overrun was caused by efforts being focused on FY 1991 carryover work. This resulted in a delay in starting work on Subtask 0307, Radioactive Release Data Availability and Review. There will be no impact on milestones as a result of this.

Planned Work for the Next Three Months

- complete the iodine closure document

- complete Milestones 0303A and 0304A, documented airborne and waterborne source terms
- prepare a presentation on source terms work for the National Institute of Statistical Sciences for a December seminar
- update the source term bibliographic database
- begin constructing database for reactor and separation facility operations ☐

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 0402A - Wind Field Modeling White Paper, due April 1991 and rescheduled to March 1992

- began revising report following peer review

Milestone 0402B - Atmospheric Model Documentation, due December 1991 and rescheduled to January 1992

- completed draft model design specification and completed report outline

Milestone 0402D - Meteorological Data Report, due December 1991 and rescheduled to March 1992

- continued entry of meteorological data for 1944 - 1947
- ordered additional meteorological data needed for the extended model domain from the National Climatic Data Center

Milestone 0403A - Groundwater Report, due December 1991 and rescheduled to January 1992

- continued progress on offsite migration pathway
- identified additional quarterly and monthly reports on groundwater data for the early years of Hanford Site operations

Milestone 0404A - Columbia River Pathway Summary Report, 1944-1989, due December 1991 and rescheduled to January 1992

- prepared preliminary outline of the draft report and submitted outline to the HEDR Project office
- began evaluating results of the literature and database review
- began preparing a summary of Columbia River monitoring activities for 1944-1990, for inclusion in the report
- made presentation to TSP's Environmental Transport Subcommittee regarding the status of the literature and database review and discussed proposed report contents with subcommittee chair

Major Problem Areas or Changes and Action Taken

Milestone dates for reports identified in previous sections were extended. Milestone reports 0403A and 0404A, the groundwater and Columbia River reports, are planned to be provided to the TSP in time for their review prior to the February TSP meeting.

Milestone 0402C, Report on Air Model Sensitivity/Uncertainty, was deferred until after the sensitivity/validation workshop planned for late

spring 1992. A plan for these analyses will be developed following the workshop and will include this milestone.

Variance

The cumulative cost underrun was caused by the atmospheric transport modeling effort being significantly behind schedule and by emphasis on work funded by FY 1991 carryover funds. The level of effort on model development increased during late October and should remain high during November and December.

Planned Work for the Next Three Months

- complete the groundwater and Columbia River reports (Milestones 0403A and 0404A)
- complete restructuring of the atmospheric model code
- continue work on databases for use with the revised atmospheric model □

Task 05 Environmental Monitoring Data

Objective

The objective of the Environmental Monitoring Data Task is to search, retrieve, 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 and validate computer models.

Progress

Milestone 0501A - Environmental Monitoring Data Final Report, due April 1991 and rescheduled to January 1992

- began incorporating final revisions into the report

Milestone 0502A - Vegetation Data Report, due September 1991 and rescheduled to January 1992

- continued to write sections discussing the retrieval, entry, and summaries of data

Subtask 0503 - Monitoring Document Search and Inventory

- continued work on the Monitoring Document Search and Inventory activities. Cross-comparisons between the Environmental Monitoring Document Database list and the Hanford Information Resources Tracking System title entries continue. More than 900 document titles have been entered.

Major Problem Areas or Changes and Action Taken

Delays for Milestones 0501A and 0502A have continued jeopardizing completion of inputs to other milestones. Efforts have been initiated to enhance staff support needed to complete these reports.

Variance

The cumulative cost underrun was caused by the delay in placing subcontracts and by temporary unavailability of staff.

Planned Work for the Next Three Months

- finalize Milestone 0501A, Environmental Monitoring Data Report and Milestone 0502A, Vegetation Monitoring Data Report □

Task 06 Demography, Food Consumption and Agriculture

Objective

The objective of the task is to develop the demographic, food consumption, and food production and distribution 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 January 1992 and Milestone 0601C, Milk Distribution Estimates Final Report, due April 1991 and rescheduled to January 1992

- continued to address TSP comments on both of these Phase I reports

Milestone 0602B - Letter Report: Status of Food Consumption Methodology, due May 1992

- initiated agricultural survey design

Milestone 0603A - Phase I Milk Report Addendum, due January 1992

- finalized Phase I milk model
- completed milk model writeup for Ferry, Stevens, and Okanogan counties

Other Activities

- met 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 to review outcomes from September's Native American Working Group meeting regarding integration of the Native American components of the HEDR and thyroid study projects
- discuss plans for a two-step transition from the current arrangement to an integrated contract with coordinated work scopes for the eight tribes
- at a Native American Working Group meeting, discussed data entry procedures and other quality issues regarding the compilation of food consumption and population data gathered by the Colville Confederated Tribes and the Nez Perce Tribe

- modified an electronic spreadsheet to assist the Colville and the Nez Perce tribes with data entry and calculation of average and total foods consumed
- reviewed a draft of the Kalispel food consumption and agricultural practices survey form
- contacted the Yakima and Umatilla project coordinators to discuss progress to date

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused by less interaction with the Native American tribes than expected. After receiving the Native American data, the variance will be spent.

Planned Work for the Next Three Months

- complete Milestones 0601A, 0601B, and 0601C (Phase I reports on population, food, and milk distribution estimates)
- review tribal interview guides for Yakima and Nez Perce tribes
- identify and refine specific data compilation protocols
- review preliminary tribal food consumption data
- contribute to develop Native American Continuing Research Plan ☐

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, representative 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 - Documentation Report of Air Pathways and Dose Code, due December 1991 and rescheduled to January 1992

- continued testing to demonstrate that the code is functional

Milestone 0703A - Letter Report: Iodine-131 Parameters and Dose Factors, Phase I, due November 1991 and rescheduled to January 1992

- completed draft letter report and submitted it to internal review

Milestone 0703B - Letter Report: Iodine-131 Parameters and Dose Factors, revised model, due February 1992

- began work on iodine-131 parameters and dose factors literature review and documentation

Major Problem Areas or Changes and Action Taken

The process of running, testing, and debugging the air pathway code continued to be very time-consuming and difficult, because of the extremely large number of data points generated by even a single Monte Carlo simulation run at the expanded spatial and temporal resolution. To simplify testing, it was decided to revise the structure of the input files and the corresponding code so that the data could be read by day of year within location. This restructuring will minimize the number of file reads and result in approximately a factor of ten reduction in code run time, thus facilitating code testing and debugging. The code and input file restructuring is nearly completed. Coding and testing on the VAX computer, using the "best estimate" benchmark, is expected to be completed in November. The December 1991 report (Milestone 0702A) was extended to January to accommodate this change.

Variance

No significant cumulative variance

Planned Work for the Next Three Months

- demonstrate that the revised air pathway code is functional
- document the revised air pathway code (Milestone 0702A) and complete the letter report on Phase I iodine-131 parameters and dose factors (Milestone 0703A)
- continue work on literature search and documentation of iodine-131 parameters and dose factors
- transfer and convert the code and data to the Sun-4 computer
- complete the parameter selection submodel ☐

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 September 1991 and rescheduled to January 1992

- conducted sensitivity analyses

Other Activities

- began organizing HEDR Project speakers for a 1-day session at the workshop, "Statistical Issues in Environmental Modeling and Monitoring" to be held at the National Institute of Statistical Sciences (NISS), Research Triangle Park, North Carolina, December 3-4, 1991

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused by required travel on other projects and unexpected down time of the PNL VAX computer.

Planned Work for the Next Three Months

- complete iodine-131 conversion factor report (Milestone 0802A)
- complete preparations for key HEDR Project scientists to make presentations at the NISS workshop in December
- assess validity of latest project network design □

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 (109 records/4,170 pages)
- verified, processed, and stored project records (159 records/2,225 pages)
- transferred three packages of records to the RL Public Reading Room (6 records/493 pages).

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative underrun was caused by less records management support required than anticipated

Planned Work for the Next Three Months

- process incoming project records
- transfer processed project records to the RL Public Reading Room
- determine whether HEDR records management procedure RMP-001 agrees with records management requirements of CDC, Battelle, and HEDR, and make appropriate changes to the procedures
- incorporate the project office record-tracking information prior to 8/89 onto the current database ☐

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, and completed

- finalized corrective action responses to Battelle's internal audit report and submitted responses to Battelle auditors for approval and acceptance. Response included commitments to verify all data hand-entered into the flat files and to verify all codes that are used to perform QA checks of data entered electronically. Once these responses are accepted, the corrective actions will be verified via an internal surveillance.

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"
- 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

Subtask 1102 - Declassification

- declassified 22 Hanford-Site originated documents, 16 of which are of potential interest/use to the project. Table 11.1 shows the status of declassification to date.

Subtask 1103 - Resource Identification and Availability

- added new citations to the tracking system, which now contains nearly 4,900 publications
- provided the RL Public Reading Room with 77 documents of potential interest/use in the HEDR Project. A title listing of these reports is given in Appendix B.
- reviewed 40 documents held by General Electric attorneys Perkins Coie of Seattle for relevance to the project. Only two were determined to be of potential use and/or interest to HEDR and these have been added to the tracking system and placed in the RL Public Reading room.
- met with TSP member B. Shleien to make arrangements for final verification on his annotated bibliography, which is scheduled for publication by the TSP in the near future

RL Public Reading Room Activity

- In October, the Reading Room had 13 HEDR users and distributed 47 HEDR reports.

Major Problem Areas or Changes and Action Taken

None.

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
- identify significant documents that address fuel element failures that occurred in now-decommissioned Hanford production reactors

TABLE 11.1. Declassification by Task 11 Staff for the HEDR Project (1944-1960 Documents)

<u>Document Type</u>	<u>Number</u>	<u>Comment</u>
Total Hanford-Site 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 were actually unique documents; the rest were double numbered, previously declassified, or originated as unclassified
Number of documents from the 1,450 requested by more than 1 person	367	Reviews and actions completed and reported to the TSP 6-28-91
Number of documents from the 1,450 requested by single individuals	1,066	
Number of documents out of the 1,066 declassified to date	755	
Number of documents out of the 1,066 identified by TSP member to be of interest	282	
Number of documents out of the 1,066 deemed by a TSP member to be of no interest to project or public	290	
Approximate number of documents out of the 1,066 yet to be reviewed from single-request list	~20	

<u>Documents Declassified</u>	<u>Hanford Historical</u>	<u>HEDR-Related^(a)</u>
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
October 1991 (FY 1992)	<u>22</u>	<u>16</u>
TOTAL (March 1987 - October 1991)	2073	1092

(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.

- 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
- declassify, with or without deletions, those documents from the prioritized list of Hanford-

Site originated classified documents that have been reviewed by TSP members and identified as being of use to the project

- identify and retrieve data on 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, rescheduled to October 1991, and completed

- identified changes to the TSP videotape script following viewing by Centers for Disease Control staff
- completed editing to modify the master videotape
- ordered re-recording of the 500 half-inch labeled and boxed videotapes, to be delivered to TSP staff for distribution to the public

Other Activities

- received and reviewed draft TSP poster on dose reconstruction from TSP Communications Subcommittee staff
- assisted in arranging a presentation by HEDR staff to the local chapter of the Society for Risk Assessment
- provided information to K. Morgan, RL, for a presentation that included HEDR
- provided copy of the Summary Report—Phase I of the HEDR Project to

R. Fellers, Chapel Hill, North Carolina. Also, furnished HEDR information to J. Yates, Pasco, Washington, and J. Zimmer, Richland, Washington, in response to citizen requests. Referred them to the TSP toll-free telephone information line for additional materials and mailing list registration.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative underrun was caused by less than anticipated support for the TSP Communications Subcommittee.

Planned Work for the Next Three Months

- finalize duplication and assist in distribution of TSP videotape
- assist in planning and development of focus groups and TSP poster
- attend TSP Communications Subcommittee meeting in November □

Appendix A
Milestones, Schedule and Costs

FIGURE A.1. HEDR Project Milestones

FIGURE A.1. HEDR Project Milestones (contd)

FIGURE A.1. HEDR Project Milestones (contd)

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

	October 1991			FY 1992 to Date (October 1991 - September 1992)					Budgeted FY Labor Hours
	Labor \$	Non- Labor \$ (a)	Total \$	Labor \$	Non- Labor \$ (a)	Total \$	Cum (b) Planned	Cum Variance	TSP (c) Approved FY Budget
HEDR Project Tasks									
Task 01 - Project Management (d)									
0101 Project Planning & Control	26	9	35	26	9	35	50	15	722
0102 Final Phase I Reports	2	0	2	2	0	2	2	0	12
0103 Project Administration	18	5	23	18	5	23	27	4	379
0104 Project Peer Review	2	0	2	2	0	2	0	-2	14
Subtotal Task 01	48	14	62	48	14	62	79	17	1,128
Task 02 - Technical Integration									
0201 Tech Planning/Control/Rep	10	0	10	10	0	10	5	-5	66
0204 Proj Tech Cord /Analysis	0	0	0	0	0	0	7	7	78
0205 Path & Dose Model Require	4	1	5	4	1	5	10	5	131
Subtotal Task 02	14	1	15	14	1	15	22	7	274
Task 03 - Source Terms									
0301 Tech Planning/Control/Rep	8	0	8	8	0	8	7	-1	54
0302 Closure of Ph I Iodine Rel	0	0	0	0	0	0	2	2	5
0304 Rad Releases to Water	1	0	1	1	0	1	2	1	99
0305 Source Term Release Model	0	0	0	0	0	0	2	2	5
0307 Rad Release Data Avail/Rev	3	0	3	3	0	3	14	11	182
Subtotal Task 03	12	0	12	12	0	12	26	14	344
									3,607

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

October 1991			FY 1992 to Date (October 1991 - September 1992)						Budgeted
Labor \$	Non- Labor \$ (a)	Total \$	Labor \$	Non- Labor \$ (a)	Total \$	Cum (b) Planned	Cum Variance	Approved FY Budget	FY Labor Hours
Task 04 - Environmental Transport									
0401 Tech Planning/Control/Rep	1	0	1	0	1	0	-1	56	576
0402 Atmospheric Model Develop	17	0	17	0	17	10	-7	214	2,228
0403 Groundwater Transport	5	0	5	0	5	11	6	61	684
0404 Surface Water Transport	6	0	6	0	6	10	4	114	1,224
0405 Atmospheric Model Databas	0	0	0	0	0	4	4	72	940
0406 Atmospheric Model Calculat	0	0	0	0	0	0	0	31	355
Subtotal Task 04	22	0	22	0	22	35	6	547	6,007
Task 05 - Environmental Monitoring Data									
0501 Tech Planning/Control/Rep	3	0	3	0	3	5	2	43	394
0502 Terrestrial Monitoring Data	3	0	3	0	3	10	7	67	621
0503 Environmental Monit..ing Dai	0	0	0	0	0	5	5	44	518
0504 Surface-Water Monitoring	2	0	2	0	2	7	5	15	186
Subtotal Task 05	8	0	8	0	8	27	19	169	1,719
Task 06 - Demography, Food Consumption & Agriculture									
0601 Tech Planning/Control/Rep	6	1	7	1	7	3	-4	40	421
0602 Food Consumption	0	0	0	0	0	0	0	60	512
0603 Milk/Other Food Model Dev	0	1	1	1	1	5	4	340	1,481
0605 Native American Data	0	0	0	0	0	9	9	100	309
Subtotal Task 06	6	2	8	2	8	17	2	540	2,723

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

October 1991			FY 1992 to Date (October 1991 - September 1992)						
Labor \$	Non- Labor \$(a)	Total \$	Labor \$	Non- Labor \$(a)	Total \$	Cum (b) Planned	Cum Variance	Approved FY Budget	Budgeted FY Labor Hours
Task 07 - Environmental Pathways & Dose Estimates									
0701 Tech Planning/Control/Rep	4	0	4	0	4	4	0	55	591
0702 Path & Dose Code Dev/Doc	17	3	20	3	23	17	-3	170	1,924
0703 Path & Dose Model Paramet	3	0	3	0	3	7	4	40	466
0705 Dose Calculations	0	0	0	0	0	1	1	40	412
Subtotal Task 07	24	3	27	3	30	22	2	305	3,393
Task 08 - Statistics									
0801 Tech Planning/Control/Rep	2	2	4	2	6	4	1	50	409
0802 Stats Support for Tech Work	3	0	3	0	3	12	9	140	1,234
0803 Analysis of Model Reliability	5	0	5	0	5	11	6	166	1,639
Subtotal Task 08	10	2	12	2	14	28	16	355	3,282
Task 09 - Records Management									
0901 Tech Planning/Control/Rep	1	0	1	0	1	1	0	19	301
0902 Project Records Management	3	0	3	0	3	3	0	72	1,632
Subtotal for Task 09	4	0	4	0	4	4	0	91	1,933
Task 10 - Quality Assurance									
1001 Tech Planning/Control/Rep	1	0	1	0	1	1	0	31	374
1002 QA Program Development	0	0	0	0	0	0	0	18	245
1003 QA Verification	0	0	0	0	0	1	1	12	184
Subtotal Task 10	1	0	1	0	1	3	2	61	803

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

	October 1991			FY 1992 to Date (October 1991 - September 1992)					TSP (c)	
	Labor \$	Non-Labor \$ (a)	Total \$	Labor \$	Non-Labor \$ (a)	Total \$	Cum Planned	Cum Variance	Approved FY Budget	Budgeted FY Labor Hours
Task 11 - Information Resources										
1101 Tech Planning/Control/Rep	4	0	4	4	0	4	4	0	40	966
1102 Hanford Document Declass	2	0	2	2	0	2	2	0	52	1,179
1103 Hanford Info Resources Ident	5	0	5	5	0	5	6	1	65	1,141
Subtotal Task 11	11	0	11	11	0	11	12	1	157	3,286
Task 12 - TSP Communications Support										
1201 Tech Planning/Control/Rep	2	0	2	2	0	2	1	-1	29	482
1202 TSP Public Outreach Support	0	0	0	0	0	0	1	1	10	52
1203 Comm Assessment Research	0	0	0	0	0	0	2	2	14	134
1204 TSP Meeting/Material Sup	0	0	0	0	0	0	1	1	26	152
Subtotal - Task 12	2	0	2	2	0	2	5	3	79	820
Subtotal, HEDR Project Tasks	169	22	191	169	22	191	287	96	4,049	43,564
Management Reserve	0	0	0	0	0	0	0	0	30	0
Subtotal, Project Tasks Plus Management Reserve	169	22	191	169	22	191	287	96	4,079	43,564

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

	October 1991		FY 1992 to Date (October 1991 - September 1992)					TSP (c)		Budgeted FY Labor Hours
	Labor \$	Non- Labor \$ (a)	Total \$	Labor \$	Non- Labor \$ (a)	Total \$	Cum (b) Planned	Cum Variance	Approved FY Budget	
Technical Steering Panel (e)	0	2	2	0	2	2	60	58	300 (f)	0
Native American Research	0	0	0	0	0	0	22	22	110 (f)	0
TOTAL	162	24	193	162	24	193	362	176	4,489	43,564

(a) Non-labor dollars include expenses such as travel, publication production, procurements, and subcontracts.

(b) The monthly planned amounts are given in the cost section of Figures 2, A. 2, and A.3, pages xi, A.9, and A.10, respectively.

(c) "TSP approved FY Budget" is the approved FY 1992 budget from the FY 1992 Task plans plus the allocation of the FY 1991 carryover funds as approved in a letter from D. B. Shipley to J. E. Till, dated 11-19-91

(d) Project management includes activities such as project control and administration, project communications, subcontract administration, records control, and peer review.

(e) TSP costs are administered through subcontracts which are reflected as non-labor costs. Actual

TSP expenses include both labor and non-labor.

(f) FY budget assumes Technical Steering Panel and Native American contracts will transfer to CDC in conjunction with the signing of a contract between Battelle and CDC on February 28, 1992.

FIGURE A.2. Technical Steering Panel Budget Status

FIGURE A.3. Native American Research Budget Status

Appendix B

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

Appendix B

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

BNWL-CC-2255	Changes in Scintillation Probe Finding—1963 Through 1968 200 Area Waste Disposal Site Monitoring Wells. 30 p.	09/29/69
BNWL-SA-0668	Fission Product Aerosol Behavior in the PRTR Fuel Rod Failure of September 29, 1965. 54 p.	11/22/65
BNWL-SA-1025	Airborne Radionuclides Associated with Normal and Anomalous Reactor Operations. 18 p.	05/08/67
DUH-00292	Site X Technical Section Weekly Progress Reports for January 1944. 6 p.	01/31/44
DUH-10548	Admixture of Pile Effluent with River. 2 p.	06/26/45
DUH-10645	Activity in Cooling Water at Site W. 6 p.	07/15/43
DUH-12040	Check List of W Problems. 3 p.	12/10/43
*HAN-53361	Slug Ruptures (1948 - June 1955).	CIRCA 1956
HAN-73214	Operation of Hanford Engineer Works Book-4: Manual of Analytical Instruments. 190 p.	12/01/46
HW-3-1727	Comparison of Observed and Calculated Flattening at 105-D. 7 p.	02/14/45
•HW-3-1947-DEL	100 Area Technical Report for Technical Progress Letter No. 37 Through No. 78 (3-22-45) Through (12-31-45). 175 p.	03/22/45
*HW-7-2092	Flow Rates in Tubes of 105 Piles. 15 p.	07/16/45
HW-07780	Permissible Plutonium Content of Stack Exhaust Air. 2 p.	10/05/47
HW-11528	Activity of Fission Products. 4 p.	11/11/48
HW-13622	Nozzle Replacements 100 B, D, F, and DR. 2 p.	06/25/49
HW-15802	Collection and Analysis of Active Particles. 13 p.	01/27/50
HW-17011	Increased Capacity of BiPO ₄ Separation Plants. 7 p.	02/23/50
HW-17381-DEL-REV1	Dissolving of 20-Day Metal at Hanford. 130 p.	05/01/50
HW-19957	Products Test 105-417-P, Process Tube Purge During Pile Operation. 4 p.	02/06/51

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

HW-19985	Annual Report for 1950 on H. I. Surveys of Building Outside the Exclusion Areas in the 100, 200, and 300 Areas. 5 p.	01/15/51
HW-20717	Interim Report Production Test 105-417-P, Process Tube Purges During Pile Operation. 9 p.	03/23/51
HW-23781	Annual Report for 1950 of Non-process Buildings and Areas Reported by the Radiation Monitoring Units of the Manufacturing and Radiological Sciences Departments. 5 p.	03/11/52
HW-24560	Final Report - Production Test 105-3-MR, The Use of Dicalite Diatomaceous Earth as a Purge Material in the 100 Areas. 2 p.	05/26/52
• HW-25902	Final Report Production Test 105-417-P, Process Tube Purge During Pile Operation. 7 p.	10/15/52
HW-26489	Alternative Filter Equipment for Ventilation Air of Separation Plants. 16 p.	12/08/52
HW-27265	Annual Report for 1952 on Radiation Surveys on Reactor Section Buildings Outside Exclusion Areas. 2 p.	02/25/53
HW-30299	Radiochemical Analysis Report of Reactor Tube Coolant Water Production Test #105-509-E Supplement E at 100-D Area. 3 p.	12/16/53
HW-30852	Annual Report for 1953 on Radiation Surveys of Reactor Section Buildings Outside Exclusion Areas. 2 p.	02/12/54
HW-32037-RD	Ruthenium Removal from REDOX Product Solutions by Tail-End Ozonization Rough Draft. 16 p.	05/28/54
HW-32467	Terminal Status Report-REDOX Contamination. 18 p.	07/13/54
HW-34311	High Radiation Levels at the Discharge Faces of the Reactors. 5 p.	01/04/55
•HW-34821	Reduction of Rear Face Zn ⁶⁵ Activity. 5 p.	01/31/55
HW-37710-DEL	Production Test 105 Series, a Bibliography. 623 p.	09/01/55
HW-42028	Annual Report for 1955 on Radiation Surveys of Reactor Section Buildings Outside 105 Radiation Areas. 2 p.	03/14/56
•HW-43598	Control of REDOX Waste. 4 p.	05/21/56

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

HW-45636	The Determination of Cu ⁶⁴ in Reactor Effluent Water by Coincidence Counting of the Positron Annihilation Radiation. 25 p.	10/12/56
*HW-46104	Manual of Standard Procedures 100, 200, and 300 Area Survey Work. 160 p.	12/01/49
•HW-48090-RD	Hot Semiworks Summary Run PX-12. 21 p.	01/10/57
HW-50310	Determination of p ³² and As ⁷⁶ in Reactor Effluent Water by Beta-Ray Absorption Techniques. 29 p.	07/02/57
•HW-51970	K-Reactors Hydraulic Demand. 5 p.	08/16/57
*HW-52824	Ultimate Disposal of PUREX Wastes. 21 p.	09/26/57
*HW-55289	PUREX Dissolver Studies. 17 p.	03/10/58
•HW-56230-RD	Operational Problem of the Original Hanford Production Reactor. 19 p.	07/10/58
HW-56366	A Feasibility Study on the Reduction of p ³² and As ⁷⁶ Concentrations in Reactor Effluent Water.	06/12/58
*HW-57902	Irradiation of One Swaged UO ₂ Stainless Steel Clad Fuel Element in a KE Front-to-Rear Test Hole. 3 p.	10/27/58
*HW-58265-RD	Water Capacity Without Changes Other than Re-orificing and Charging I&E Slugs. 2 p.	12/16/57
*HW-58358	Undissolved Fuel Pieces in Failed REDOX Dissolvers. 4 p.	12/03/58
HW-59961	Fission Product Release Studies Status and Need. 4 p.	04/10/59
*HW-60157	Examination of M-388 Rupture from IP-80-A. 10 p.	06/16/59
HW-60689	Fission Product Release from Uranium Heated in Air. 41 p.	08/03/59
*HW-61185	Radiometallurgical Examination of M-388 Failure from 5148 KE (RM-299). 8 p.	07/20/59
*HW-61839-REV	Radioactive Material Release and 105 Building Pressures for Project CGI-791. 16 p.	06/10/60
*HW-62585	Examination of M-388 Failure from 3665 KW (RM-305). 3 p.	10/26/59

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

*HW-64393	Fast Neutron Fluxes in Hanford Reactors. 28 p.	05/03/60
*HW-64857-RD	Comments on Precision and Accuracy of Releases. 2 p.	07/22/59
HW-66295	Production Test-IP-347-A: Use of Aluminum Nitrate in Place of Aluminum Sulphate for Water Treatment. 7 p.	08/02/60
*HW-66468	Reactor Process Channel Water Leak History FY-1959 and 1960. 11 p.	08/17/60
*HW-67365	Activity of Principal Gamma Fission Products. 23 p.	11/03/60
*HW-68377	Thermal and Fission Neutron Flux Measurements in Process Tubing and in Neutron Activation Test Locations. 13 p.	02/02/61
*HW-69841	Interim Report Test to Reduce Reactor Effluent Water Activity 100-F Area. 9 p.	06/05/61
HW-69924	Measurements of Radioisotopes and Trace Constituents in the PRTR D ₂ O and Helium Systems. 13 p.	06/14/61
HW-70980	Radioisotope Concentrations in the PRTR Primary Coolant and Helium System During Operation with Failed Fuel Element(s). 15 p.	09/07/61
HW-73972	The Sequential Separation and Determination of Arsenic-76 and Phosphorous-32 in Reactor Effluent Water. 12 p.	06/12/62
HW-74536	Fission Product Tritium in Separation Wastes and in the Ground Water. 13 p.	08/01/62
HW-75976	The Effect of Chemical Additives and Coating Materials on the Adsorption of Radionuclide Parent Elements on Aluminum Surfaces. 18 p.	12/26/53
HW-76352	Waste Management Program Chemical Processing Department. 58 p.	02/25/63
HW-76642	Radiation Effects on Aluminum Filming and Corrosion. 18 p.	02/20/63
HW-78458	Crud and Film Program Status Report. 10 p.	07/3-/63

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

HW-84318	Anticipated Service Life of REDOX Dissolvers. 6 p.	10/01/64
HW-SA-2016	Aerosol Research at Hanford and Engineering Applications to Production Reactors. 23 p.	10/24/60
HW-SA-3487	Distribution on Na ²² and Cs ¹³⁴ in Fallout, Foods and People. 7 p.	04/22/64
HW-SA-3547	Preliminary Rough Draft of Contribution to Book Manuscript Chapter 6-Contamination and Film Formation. 9 p.	05/25/64
HW-SA-3581	Fallout Concentrations of 12 Radionuclides in Air: 1962 through Mid-1964. 7 p.	06/17/64
PNL-7410	Draft Summary Report - Phase I of the Hanford Environmental Dose Reconstruction Project. 53 p.	07/20/90
PNL-7410	Summary Report - Phase I of the Hanford Environmental Dose Reconstruction Project. 62 p.	08/11/91
PNL-7411	Draft Columbia River Pathway Report. 60 p.	07/20/90
PNL-7412	Draft Air Pathway Report. 70 p.	07/20/90

•Declassified by Secretary of Energy Watkins' directive.

*Declassified in 1991 by earlier guidance.

Appendix C

HEDR Documents to the TSP - October 1991

Note: This appendix lists only publications that are new this month or have undergone some kind of change, such as being approved by the TSP. A complete list for FY 1992 will be included in the September 1992 report.

Appendix C

HEDR Documents to the TSP - Octobedr 1991

Title	Author	Date Issued	Publication No.	Additional Information	Status
Effects of the Loss of Correlation Structure on Phase I Dose Estimates	JC Simpson	91/02	PNL-7638 HEDR	Milestone 0202C	Listed incorrectly in September, 1991 report as PNL-SA-191085. Correct number is PNL-7638 HEDR.
Dose Estimate Variability Caused by Air Model Uncertainties	JC Simpson	91/06	PNL-7737 HEDR	To TSP 6/91 for review	PNL addressing TSP comments
FY 1992 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shippler	91/10	PNL-7757 HEDR		T ₉ TSP for review and approval
FY 1993 Task Plans for the Hanford Environmental Dose Reconstruction Project	DB Shippler	91/10	PNL-7760 HEDR		Approved by the TSP and published final 10/91
Hanford Environmental Dose Reconstruction Project Monthly Report	HEDR Project Office	Ongoing	PNL-6450 HEDR		Periodic report

Appendix D

HEDR Presentation Handouts to the TSP - October 1991

Appendix D

HEDR Presentation Handouts to the TSP - October 1991

Title	Author	Date Issued	Publication No.	Additional Information
Status of Technical Work - HEDR Project	DB Shieler et al.	10/91	PNL-SA-20068 HEDR	Presented at TSP Mtg., 10/10-12, 1991, Walla Walla, WA

Appendix E

HEDR Open Literature Publications and Presentations - October 1991

Note: This appendix lists publications (new this month) that present aspects of dose reconstruction in the open scientific literature; TSP approval is not required. A complete listing for FY 1992 will be included in the September 1992 report.

Appendix E

HEDR Open Literature Publications and Presentations - October 1991

Title	Author	Date Issued	Publication No.	Audience	Status
Overview of the HEDR Project	DB Shipler	10/91	PNL-SA-20021S HEDR	1992 International High-Level Radioactive Waste Mgmt Conf	To be presented 4/12-16, 1992
Overview of the HEDR Project	DB Shipler	10/91	PNL-SA-20022A HEDR	Society of Environmental Toxicology and Chemistry 12th Annual Meeting	To be presented 11/91
Communicating Risk to Non-Scientific Audiences	RE Lundgren, AH McMakin	10/91	PNL-SA-19488A HEDR	Society of Environmental Toxicology and Chemistry 12th Annual Meeting	To be presented 11/21

Appendix F
Communications Log - October 1991

Appendix F
Communications Log - October 1991

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
JE Till/TSP	DB Shipler/PNL	Phone	TSP meeting agenda
ML Blazek/TSP	DB Shipler/PNL	Phone	Umatilla Tribe funding - Columbia River studies
DB Shipler/PNL	LA Sewell/CDC	Phone	Request for Proposal (RFP), personnel requirements
DB Shipler/PNL	RF Brich/RL	Phone	FY 1992 funding
DB Shipler/PNL	HA Harris/RL	Phone	FY 1992 funding
HA Harris/RL	DB Shipler/PNL	Phone	FY 1992 funding
RF Brich/RL	DB Shipler/PNL	Phone	FY 1992 funding
JE Till/TSP	DB Shipler/PNL	Phone	Work approval flowchart for Project Management Plan, FY 1992 funding
DB Shipler/PNL	LA Sewell/CDC	Phone	Umatilla Tribe contract modification, RFP
DB Shipler/PNL	B Shleien/TSP	Phone	Umatilla Tribe contract, FY 1992 funding, bibliography
DB Shipler/PNL	JE Till/TSP	Phone	Battelle deposition subpoena
DB Shipler/PNL	RF Brich/RL	Phone	Subpoena, CDC proposal schedule
K CharLee/TSP Staff	SM Finch/PNL	Phone	TSP meeting dates
K CharLee/TSP Staff	SM Finch/PNL	Phone	Cover letter
JS Stohr, TSP Staff	SM Finch/PNL	Phone, fax	Carryover funds for tribes
SM Finch/PNL	WA Bishop/TSP	Phone, fax	Carryover funds for tribes
B Burke/Umatilla Tribe	SM Finch/PNL	Phone	Software purchase

Communications Log - October 1991

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
Lowanda/Umatilla Tribe	SM Finch/PNL	Phone	Work order
SM Finch/PNL	WA Bishop/TSP	Phone	Obtaining equipment
ML Blazek/TSP	SM Finch/PNL	Phone	Invoice for Umatilla Tribe
AH Murphy/TSP	SM Finch/PNL	Phone	FY 1992 subcontract
SM Finch/PNL	AH Murphy/TSP	Fax	FY 1992 subcontract
B Aripa/Colville Tribe	SM Finch/PNL	Phone	Workshop agreement
B Shleien/TSP	SM Finch/PNL	Phone	Meeting, bibliography
A Peters/Yakima Indian Nation	SM Finch/PNL	Phone	Invoicing
T Fisher/Philadelphia	SM Finch/PNL	Phone	Request for document
J Richards/Umatilla Tribe	SM Finch/PNL	Phone	Software reimbursement
SM Finch/PNL	G George/Umatilla Tribe	Phone	Invoice
B Van Pelt/Umatilla Tribe	SM Finch/PNL	Phone	Invoice
B Aripa/Colville Tribe	SM Finch/PNL	Phone	FY 1991 report, new contract
SM Finch/PNL	J Richards/Umatilla Tribe	Phone	Software reimbursement
SM Finch/PNL	ML Blazek/TSP	Phone	Software reimbursement
SM Finch/PNL	MA Robkin, SN Davis/TSP	Phone	Security badges
K CharLee/TSP	JM Daer/PNL	Phone	Job title
MA Robkin/TSP	CM Heeb/PNL	Phone	Reference
CM Heeb/PNL	MA Robkin/TSP	Phone, fax	TSP meeting
RO Gilbert/PNL	K Kopecky/TSP	Phone	December statistics workshop

Communications Log - October 1991

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
B Shleien/TSP	RO Gilbert/PNL	Phone	Statistics report outline
B Shleien/TSP	SP Gydesen/PNL	Phone	Meeting
SP Gydesen/PNL	NJ Germond/TSP	Phone	Document review
JS Stohr/TSP Staff	SP Gydesen/PNL	Phone	Declassification plan, GE suit
B Shleien/TSP	SP Gydesen/PNL	Phone	Document request
K Miles/TSP Staff	GL Harvey/PNL	Phone	TSP videotape
GL Harvey/PNL	ML Blazek/TSP	Phone, fax	FY 1992 budget
B Shleien/TSP	RL Dirkes/PNL	Phone	Inclusion of sampling uncertainty in the vegetation report
B Cook/Yakima Indian Nation	BA Napier/PNL	Phone	Suggested we look at old IAEA reports; followup on West Valley report
K Niles/TSP Staff	AH McMakin/PNL	Phone	HEDR display

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