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Hanford Environmental Dose Reconstruction Project

Monthly Report

July 1991

Prepared for the Technical Steering Panel

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HANFORD ENVIRONMENTAL DOSE
RECONSTRUCTION PROJECT

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Pacific Northwest Laboratory
Richland, Washington 99352

1950-1951

1952-1953

1954-1955

1956-1957

1958-1959

1960-1961

HANFORD ENVIRONMENTAL DOSE
RECONSTRUCTION PROJECT

Compiled By:
S. M. Finch, Project Coordinator
Hanford Environmental Dose Reconstruction Project

A. H. McMakin, Communication Specialist
Hanford Environmental Dose Reconstruction Project

Approved By:
D. B. Shipler, Manager
Hanford Environmental Dose Reconstruction Project

Approved By:
W. L. Templeton, Manager
NEPA Implementation and Environmental Documentation

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)

		<u>Complete</u>	<u>Ongoing</u>	<u>Phase I</u>	<u>FY 1991</u>
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		
89-7	Tech Communication		x		
89-8	Phase II Planning	x			
89-9	Project QA Plan		x	x (revised)	
89-10	Contracts with Tribes			x	x
90-1	Project Direction		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, cultural and technical experts nominated by the regional 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. A major effort of this task is to separate Hanford as a source of radionuclide concentrations in the environment from concentrations caused by natural sources and nuclear testing fallout.

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 populations 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 July 1991:

- prepared draft task plans for FY 1992, 1993, 1994, and 1995 and submitted them to the TSP for review
- met with TSP members and with O. Hoffman before the July TSP meeting in preparation for the meeting. The meeting with Hoffman was part of his independent evaluation of the HEDR environmental transport and dose estimating models.
- received approval from the TSP to adjust FY 1991 budget to complete approved work
- provided a briefing on Hanford document search, retrieval and declassification to DOE Field Office, Richland (RL) manager J. Wagoner, including a tour of the 3760 and 712 Buildings where Hanford documents are stored
- provided technical and scheduling comments to J. Till on his proposed work plan for the remainder of the project
- met with K. Kopecky (TSP) and other Hanford Thyroid Disease Study staff to discuss the survey form and data and model input issues
- prepared for an internal audit to be conducted in August
- received final TSP approval on, and published, the following reports:
 - Air Pathway Report (Milestone 0102A)
 - Columbia River Pathway Report (0102A)
 - Selection of Dominant Radionuclides for Phase I of the HEDR Project (Milestone 0201A)
 - Computational Model Design Specification for Phase I of the HEDR Project (Milestone 0201B)
- submitted the report titled Dose Estimate Variability Caused by Air Model Uncertainties (Milestone 0402E) to the TSP for review
- completed groundwater analyses of the Hanford Site, riparian wells, and watersheds, and continued writing the report documenting this work
- reviewed 15 Oregon State University reports from the 1960s and 70s to get data on river contamination
- provided a copy of the environmental monitoring document database and source term database to the RL Public Reading Room
- placed a work order with the Kalispel Tribe to gather supplementary information to be used in dose estimation
- developed and facilitated for tribal project staff members a training session on data collection design
- finalized air pathway dose code design and began coding the environmental accumulation submodel
- received a letter from General Electric expressing their willingness to cooperate with us in identifying Hanford-originated documents describing historic operations or environmental issues
- declassified 87 Hanford Site-originated documents, four of which are of potential interest/use to the project and the remainder of which are from the TSP single-request listing
- provided the RL Public Reading Room with 137 documents of potential interest/use in the project
- signed a contract with RXL Productions, Inc. to produce the TSP videotape
- provided HEDR Project information to citizens from San Diego, Richland, and Philadelphia and referred them to the toll-free number

Problems or Changes and Action Taken

There is a potential for slippage of work scheduled for the remainder of FY 1991 because of time spent by HEDR staff responding to TSP requests to prepare additional planning information for the August TSP budget/planning meeting.

Planned Work for the Next Three Months

- submit FY 1992 - 1993 task plans to the CDC in response to their request for proposal for dose reconstruction work expected in early September
- develop task plans for FY 1993 based on TSP direction at the August budget/ planning meeting
- submit the following milestones to the TSP:
 - Project Management Plan
 - Phase I final reports
 - Draft code design specifications
 - Documented Phase I iodine-131 releases
 - Documented significant airborne and waterborne radionuclides, 1944 - 57
 - Wind field modeling white paper
 - Phase I reports on environmental monitoring data, population, food, and milk distribution estimate

- Vegetation data report
- Letter report on milk outside Phase I
- Iodine-131 conversion factor report
- Internal audit report
- complete atmospheric release model
- complete restructure of atmospheric code and working version of restructured environmental/dose code
- investigate University of Washington surface water documents to obtain river monitoring data
- document tribal training session, review tribal interview guides, and review preliminary tribal food consumption data
- present a summary of communications assessment survey results to the TSP Communications Subcommittee

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. Figure A.2 shows TSP budget status.

Capital Status

\$29K of capital funding was approved for the procurement of a SPARC/RISC computer system. The \$29K plus \$106K of carryover gave the project a total of \$135K capital funding for FY 1991.

FIGURE 2. HEDR Project Budget Status - Pacific Northwest Laboratory

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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 0101B - FY 1992, 1993, 1994, and 1995 Task Plans, due July 1991 and completed

- prepared draft task plans for all years and submitted to the TSP for review

Milestone 0101C - Project Management Plan, due September 1991

- met with staff to discuss the annotated outline

Milestone 0102A - Final Phase I Reports (Summary, Air, River), due May 1991 and rescheduled to August 1991

- issued two of the three reports as final versions: Air Pathway Report and Columbia River Pathway Report. TSP comments were addressed, and the reports were approved for final publication by J. Till. The Summary Report will be sent to the TSP early next month for final approval.

Other Activities

- provided B. Shleien, TSP, with a set of requested visual materials

Major Problem Areas or Changes and Action Taken

There is a potential for FY 1991 work slippage due to additional TSP-requested planning for FY 1992-1993. No additional funds are needed to complete the FY 1991 work; however, some work may need to be completed in early FY 1992.

Variance

The cumulative cost underrun was caused by an unanticipated cost credit from Battelle's general and administrative overheads. In addition, the Phase I Summary Report is not yet finalized.

Planned Work for the Next Three Months

- finalize Phase I Summary Report
- respond to TSP direction on task plans and budget for FY 1992, 1993, and 1994, and prepare them for response to a request for proposal from the CDC
- prepare a time-phased network of approved activities for the remainder of the project
- prepare a project management plan ☐

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 0201A - Dominant Radionuclides Final Report, due April 1991, rescheduled to June 1991 and completed

- sent final version to TSP Chair for approval

Milestone 0201B - Model Specification Final Report, due April 1991, rescheduled to June 1991 and completed

- sent final version to TSP Chair for approval

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

- received comments from authors and computer implementors; preparing second draft for internal clearance
- received input from Task 08 (Statistics) staff on use of Latin Hypercube Sampling in the dose code to determine dose uncertainties

Milestone 0202C - Model Correlations Analysis Report, due February 1991 and completed

- continued to revise the report to respond to TSP comments

Other Activities

- met with TSP consultant F. O. Hoffman before the July TSP meeting to review the HEDR dose model
- participated in Native American Working Group meeting in Spokane, Washington
- participated in meeting with staff of Hanford Thyroid Disease Study (HTDS) in Richland, Washington
- continued developing decision analysis techniques for project application

Major Problem Areas or Changes and Action Taken

None.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- complete revision of Milestone 0202C, Model Correlations Analysis Report

- prepare code design specifications for the project computational model, completing Milestone 0202A
- attend Native American Working Group meetings
- continue coordinating efforts with HTDS personnel
- submit Hanford scenario to the International Atomic Energy Agency Coordinated Research Program on Validation of Model Predictions (VAMP) to validate portions of the HEDR model and obtain independent estimates of certain doses, completing Milestone 0203B
- conduct computer study to check accuracy of random number generators available on the selected computer system
- begin to develop the plan for conducting sensitivity and uncertainty analyses of the dose code □

Task 03 Source Terms

Objective

Source terms are the amount and type of radioactive materials released to the environment. Members of the Source Terms Task 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.

Uncertainty in calculated and measured data can result from many factors. Uncertainties in measured emissions may result from early measurement techniques. For calculated emissions, uncertainties may result from the differences in published variables that are used to perform calculations. By comparing the uncertainty in the available data, Source Term Task staff determine the most accurate method for developing source terms. For time periods where measured values do not exist, source terms are calculated from available information. The proposed methods and results of this task are reviewed, evaluated, and approved by the TSP.

Progress

Milestone 0302A - Documented Phase I Iodine-131 Releases, due May 1991 and rescheduled to September 1991

- continued, and nearly completed, calculating the 1944-1947 iodine-131 releases. The key references were identified, and cross comparisons between two independent references were made that allowed defensible reconstruction.

Milestone 0305A - Iodine-131 Release Model Report, due FY 1992

- began developing the release model by writing software control procedures and initial specifications

Other Activities

- presented the status of the Source Term Task at the Source Term Subcommittee meeting at the July TSP meeting in Pasco

Major Problem Areas or Changes and Action Taken

The dissolver operation reconstruction in Subtask 0302, Iodine-131 Closure, was not completed in July. The milestone for the completion of this subtask, originally scheduled for May 1991 and rescheduled to August, must now be moved to the end of September. During the July Source Term Subcommittee meeting, the TSP agreed to delay the milestone document until results from the release model could be used to better define the uncertainties. This proposal was accepted. The

key interaction of Subtask 0305 (Release Model) with other tasks is the delivery of input files for the dose model in mid-September. Iodine-131 closure work will continue because the basic data will be in hand well before the Milestone 0302A report is completed at the end of September.

The same personnel involved in the iodine-131 closure subtask are also involved in Subtasks 0303 (Airborne Isotopes Other Than Iodine-131) and 0304 (Waterborne Isotopes 1944-1957). Therefore, the July milestones for these subtasks must be moved to the end of September.

Variance

The cumulative cost underrun was caused by delaying the start of the detailed work on Subtask 0305 (Release Model). The delay was made to allow work on the iodine-131 estimates in Subtask 0302.

Planned Work for the Next Three Months

- continue work on Subtask 0302 (Iodine Closure); provide preliminary results by mid-August
- complete documentation for Subtask 0303 (Significant Airborne Releases) and Subtask 0304 (Significant Waterborne Releases) by the end of FY 1991
- complete Subtask 0305 (Release Model) by the end of FY 1991. Preliminary results will be available as input to the atmospheric model, but documentation, verification, and validation will be completed in subsequent years as originally planned. □

Task 04 Environmental Transport

Objective

Members of the Environmental Transport Task 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.

To track releases to the atmosphere from Hanford Site operations, meteorological data are needed, including wind speed, wind direction, and other data that affect the dispersion of the releases. Mathematical models are applied to these meteorological data and the source term data to calculate concentrations of radionuclides in the air and on the ground. The TSP reviews, evaluates, and provides direction concerning the proposed models.

Reconstruction of the transport of radionuclides in the Columbia River is based primarily on historical studies of the Columbia River and its tributaries. Computer models are used to reconstruct radionuclide concentrations in the river for time periods when previously published data are limited or unavailable.

The movement of radionuclides in the groundwater is reconstructed initially by using groundwater monitoring data to estimate the contribution to the Columbia River exposure pathway. Modeling will be used where previously published data are lacking.

Progress

Milestone 0402A - Wind Field Modeling White Paper, due April 1991 and rescheduled to September 1991

- continued work on wind field models; presented results of work to date at the July TSP meeting

Milestone 0402B - MESOILT2 Version 2.0 Report, due FY 1992

- continued to revise and test version 2.0 of the MESOILT2 code. Worked on partitioning iodine between species for use in computing deposition. Began documenting results of the March meeting of the atmospheric model working group

Milestone 0402C - Report on Air Model Sensitivity/Uncertainty, due FY 1992

- began incorporating uncertainty in the distribution of iodine among various species in the atmospheric model. This uncertainty affects deposition and, consequently, the dose calculations.

Milestone 0402D - Meteorological Data Report, due FY 1992

- continued entry of meteorological data for 1944-1947

Milestone 0402E - Report on Air Model Variability, due April 1991, rescheduled to July 1991, and completed

- provided milestone report to the TSP for review and comment

Milestone 0403A - Groundwater Report, due FY 1992

- completed groundwater analyses of the Hanford Site, riparian wells, and watersheds, and continued writing the section on offsite migration. Peer review and final editing of report chapter describing analysis will be conducted during FY 1992.
- reviewed Hanford monitoring documents for information on radionuclides in the groundwater. The review effort during July focused on monitoring documents from the 1960s and 1970s. Met with staff from Task 11 (Information Resources) to ensure that key Hanford documents have been identified and reviewed.
- reviewed documents reporting results of an investigation into uranium contamination on the Franklin County side of the Columbia River to the east of the 300 Area

Milestone 0404A - Columbia River Data, 1944-1989, due FY 1992

- reviewed 15 Oregon State University Department of Oceanography reports from the 1960s and early 1970s. The data are primarily radionuclide concentrations in marine biota, mostly zinc-65. A few articles contain radionuclide concentrations in Columbia River sediments, with the emphasis on the estuary.

Other Activities

- presented progress on all subtasks to the Environmental Transport Subcommittee at the July TSP meeting

Major Problem Areas or Changes and Action Taken

To keep the surface-water transport subtask on schedule, an additional staff member is working on the data and literature review.

Variance

The cumulative cost underrun continues to be reduced. Approximately one person-month of effort for an indefinite-quantity contract was incorrectly charged to another project. A correction will be made to move the costs to Task 04 of the HEDR Project.

Planned Work for the Next Three Months

- continue evaluation of wind field interpolation methods
- restructure atmospheric code to be consistent with the overall dose assessment code
- continue work on databases for use with the revised atmospheric model
- continue reviewing and summarizing Hanford Site groundwater documents for the chapter on offsite migration
- continue the literature and database review for the surface water pathway, with emphasis shifting to the University of Washington Laboratory of Radiation Biology studies □

Task 05 Environmental Monitoring Data

Objective

Members of the Environmental Monitoring Data Task 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 Environmental Pathways and Dose Estimates Task staff to estimate radiation doses and by Environmental Transport Task staff to calibrate computer models.

Progress

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

- continued modification of the report to address TSP comments

Milestone 0502A - Vegetation Data Report, due September 1991

- continued to enter raw vegetation monitoring data available for 1948-1951. Continued to enter offsite vegetation monitoring data from 1951 into the database and began entering 1950 data. Draft biases, uncertainty, and conversion factor sections of the report have been prepared.

Monitoring Document Search and Inventory (Subtask 0503)

- continued cross-comparisons among the Environmental Monitoring Document Database (EMDD) list and the HEDR Information Resources Tracking System title entries

- provided a copy of the EMDD to the DOE Field Office, Richland (RL) Public Reading Room

Surface Water Data (Subtask 0404)

- conducted technical activities in support of Subtask 0404, Surface Water Transport (reported under Task 04)

Major Problem Areas or Changes and Action Taken

Milestone 0501A, Environmental Monitoring Data Final Report, was moved from August to September 1991. Staff required for the completion of this milestone have been unable to complete the report due to the need for revisions to the FY-92/93/94 task plans in preparation for the unexpected August TSP budget/fiscal meeting as well as commitments outside of HEDR. Time needed to complete the report will be available in August.

Variance

The cumulative underrun continues to be reduced. Staff will be verifying information up through the end for the fiscal year and expect to use remaining funds.

Planned Work for the Next Three Months

- finalize Milestone 0501A, Environmental Monitoring Data Final Report
- collect and inventory additional Columbia River monitoring data

- continue to collect and inventory additional vegetation data and begin preparation of vegetation monitoring data report ☐

Task 06 Demography, Food Consumption and Agriculture

Objective

Task members 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. These groups include Native American tribes, army personnel stationed at Hanford, some Hanford construction workers, and migrant workers.

Sources and quantities of food and water consumed by these populations must be estimated, because food and water provide pathways for the intake of radionuclides. 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.

Methods to collect data and to estimate population densities and food consumption are reviewed and approved by the TSP.

Progress

Preliminary Native American Data (Subtask 0602)

- placed a work order with the Kalispel Tribe to gather supplementary information
- met with the Native American Working Group to review a draft policy for collection and management of tribal data. Before being sent to the TSP for formal approval, this policy will be revised based on comments offered at the meeting.
- organized and facilitated for tribal project staff members a training session on data collection design. The training session was held in Spokane on July 29-30 and attended by representatives of all eight tribal subcontractors, in

addition to representatives from the Indian Health Service, the HTDS, and the TSP.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost overrun was caused by the delay in tribal work. The Native American Working Group has completed development of a process for collecting the data. Work orders are now being placed for data collection activities. Also, efforts are under way to place a contract with Washington State University for milk model activities.

Planned Work for the Next Three Months

- document tribal training session and associated action items
- review tribal interview guides
- identify common data compilation protocols
- review preliminary tribal food consumption data
- complete milk model verification for Phase I area
- complete general milk production, distribution, and consumption, for counties of interest for the HTDS ☐

Task 07 Environmental Pathways and Dose Estimates

Objective

Task members 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. All significant decisions on exposure models and input parameters are presented to the TSP for review, evaluation, and approval.

Progress

Code Restructure and Analysis (0702)

- presented information to the TSP on the status of the environmental pathways and dose model/code
- met with HTDS personnel from the Fred Hutchinson Cancer Research Center (FHCRC) to discuss the survey form and other data and model input issues

Milestone 0702A - Air Pathway Dose Code Documentation, due FY 1992

- finalized code design and began coding the environmental accumulation submodel
- continued working with Tasks 02 (Technical Integration) and 08 (Statistics) to evaluate hardware and software requirements for the restructured air pathway model/code

Milestone 0703A - Model Parameters Report, due FY 1992

- continued literature review and documentation of radionuclide transfer factors

Major Problem Areas or Changes and Action Taken

None.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- complete initial working version of restructured environmental/dose code (Milestone 0702A)

- transfer initial environmental/dose code to SUN 4 computer system
- resume work on literature search and documentation of radionuclide transfer factors (Milestone 0703A) in October
- support Task 02 in completing the design specification document for the restructured air pathway code (Milestone 0202A) ☐

Task 08 Statistics

Objective

Task members provide statistical support to members of 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. Using sensitivity analyses results, project staff can focus resources where the benefit in terms of accurate dose estimates is greatest. Uncertainty analyses enable task leaders 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

- continued report planning discussions with E. Mart (consultant), R. Dirkes (Task 05 leader), and B. Hanf. The report will estimate the sensitivity and uncertainty of factors used to convert historic (1945-1946) gross beta count-per-minute measurements on native vegetation (mostly sagebrush) to concentrations per unit weight of iodine-131.
- continued to develop methodology for conducting and interpreting the uncertainty/sensitivity analyses
- began software quality control documentation and required code development for the uncertainty analyses
- reviewed draft chapters in the companion paper being prepared by E. Mart that will discuss the conversion factors in detail

Other Activities

- 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 Task 02 (Technical Integration) and Task 04 (Environmental Transport) in support of Milestones 0202C, 0402C, and 0402E □

Task 09 Records Management

Objective

Members of the Records Management Task 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

- presented a training session on records management requirements to project staff in preparation for upcoming internal audit
- met with several task and subtask leaders to provide information on records management requirements in preparation for the audit
- received project records from the HEDR Project Office (211 records/7334 pages)
- verified, processed, and stored project records (129 records/5844 pages)
- transferred four packages of records to the RL Public Reading Room (14 records/3569 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

- met with key software code custodians/users to discuss appropriate software requirements necessary to manage key HEDR software
- continued meeting with key task leaders to check for compliance with the technical, QA, and data quality objective requirements

Major Problem Areas or Changes and Action Taken

None.

Variance

No significant cumulative variance.

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 with project technical, QA, and data quality objective requirements
- prepare for the HEDR audit being planned by the Battelle internal audit group ☐

no other can claim the same

Article

and

and section 1 in

Article 1 of the Constitution

that the United States is a republic
 and that the people are the source of
 all power and authority in the United States

and that the people have the right to
 alter, amend or abolish their
 government by a majority vote

Article

the United States is a republic
 and that the people are the source of
 all power and authority in the United States

and that the people have the right to
 alter, amend or abolish their
 government by a majority vote

and that the people have the right to
 alter, amend or abolish their
 government by a majority vote

Article

Article 1 of the Constitution

Article 1 of the Constitution

Article 1 of the Constitution
 and that the people are the source of
 all power and authority in the United States
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 alter, amend or abolish their
 government by a majority vote

Article

Article 1 of the Constitution

Article 1 of the Constitution

Article 1 of the Constitution

Article 1 of the Constitution

Article 1 of the Constitution

Task 11 Information Resources

Objective

Members of the Information Resources Task work with the other task members 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

Information Resources Task Management (Subtask 1101)

- received a letter from General Electric expressing their willingness to cooperate with us in identifying Hanford-originated documents describing historic operations or environmental issues. A title listing of General Electric's holdings in the Nuclear Energy Legal Operations file has been requested.
- At the request of the Westinghouse Hanford Company Legal Office and with approval of Battelle's Legal Office and the HEDR Project Office, S. Gydesen signed a declaration regarding Hanford Nuclear Litigation that was filed with the U.S. District Court, Eastern District of Washington, on July 24, 1991. This declaration details her knowledge of Hanford-originated documents and methods to retrieve them.

Declassification (Subtask 1102)

- The DOE-Headquarters Office of Classification has rescinded an earlier determination that cost information associated with producing plutonium and irradiating materials 1944-1960 is unclassified. This change will not affect HEDR needs.

- worked with M. Robkin (TSP), who spent one day on site reviewing classified documents, to identify those to be recommended for declassification review
- declassified 87 Hanford Site-originated documents, four of which are of potential interest/use to the project. The remainder are from the TSP single-request prioritized listing and have not yet been reviewed by a TSP member; consequently, their value to HEDR is yet to be determined. Table 11.1 shows the status of declassification to date.

Resource Identification and Availability (Subtask 1103)

- added new citations to the tracking system that now contains more than 4,700 publications
- provided the RL Public Reading Room with 137 documents of potential interest/use in the HEDR Project. A title listing of these reports is given in Appendix B.
- provided B. Shleien (TSP) with numerous documents addressing radiation dosage determination

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 (from 1944-1960) as of 6/90 that were classified	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 approximately 1,450 requested for declassification by more than 1 person	367	
Number of documents of the approximately 1,450 requested for declassification by single individuals	1,066	
Number out of the 367 that were deemed to be of no interest to the public or the project, per TSP member M. Robkin	131	
Multiple-request documents out of the 367 deemed useful for declassification by the TSP	236	All declassified; list in RL Public Reading Room

<u>Documents Declassified</u>	<u>Hanford Historical</u>	<u>HEDR-Related^(a)</u>
March 1987 - September 1987	35	27
October 1987 through September 1988	52	37
October 1988 through September 1989	186	177
October 1989 through September 1990	455	236
October 1990 through July 1991	<u>1242</u>	<u>539</u>
TOTAL (March 1987 - July 1991)	1970	1016

(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.

RL Public Reading Room Activity

- In July, the RL Reading Room had 15 HEDR users and distributed 31 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 database 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 Site-originated classified documents, declassify, with or without deletions, those documents reviewed by M. Robkin and identified as being of use to the project
- identify and retrieve daily operating data for all Hanford reactors, 1944-1971
- 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 and rescheduled to August 1991

- provided Battelle videoscript comments to TSP Communications Subcommittee
- signed contract with vendor (RXL Productions, Inc., Spokane, Washington) to produce TSP videotape. The subcontractor will provide video production services and edit to TSP-developed script. Vendor began videotaping during July TSP meeting in Pasco.
- assisted in search of historical photos of Hanford facilities and operations. Photos will be reproduced from archived negatives and used in the video production.

Milestone 1203A - Letter Report on Communications Assessment Research, due June 1991 and rescheduled to August 1991

- participated in a debriefing of Washington State University researchers who conducted the telephone sampling during June and July. Information learned is expected to assist the

TSP Communications Subcommittee in interpreting findings. A summary of results will be provided to the TSP Communications Subcommittee in August.

Other Activities

- in response to requests, provided HEDR Project information to citizens from San Diego, California; Richland, Washington; and Philadelphia, Pennsylvania. Referred them to the TSP toll-free telephone information line for additional materials and mailing list registration.
- presented a status report on video contract progress, as well as the communications assessment survey, during the Communications Subcommittee meeting at the July TSP meeting in Pasco

Major Problem Areas or Changes and Action Taken

None.

Variance

A cost underrun resulted from delays in videotape development and communications assessment research activities. This underrun is expected to be absorbed as the activities regain their full momentum during August and September.

Planned Work for the Next Three Months

- assist in production and completion of the TSP videotape

- attend the August Communications Subcommittee meeting in Portland
- receive and present a summary of communications assessment survey results to the TSP Communications Subcommittee in August □

Appendix A
Milestones, Schedule and Costs

FIGURE A.1. HEDR Project Milestones

FIGURE A.1. HEDR Project Milestones (contd)

[illegible]

FIGURE A.1. HEDR Project Milestones (contd)

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

		<u>July 1991</u>			<u>FY 1991 to Date (October 1990 - September 1991)</u>						
		<u>Labor \$</u>	<u>Non-Labor \$ (b)</u>	<u>Total \$</u>	<u>Labor \$</u>	<u>Non-Labor \$ (b)</u>	<u>Total \$</u>	<u>Cum Budget</u>	<u>Cum Variance</u>	<u>TSP Approved FY Budget</u>	<u>Budgeted FY Labor Hours</u>
<u>HEDR Project Tasks</u>											
Task 01 - Project Management (c)											
0101	Project Control	31	-39	-8	405	88	493	536	43	637	5,883
0102	Final Phase I Reports	3	0	3	74	7	81	102	21	102	991
0103	Records Control	4	0	4	57	1	58	58	0	70	1,418
0104	Peer Review	0	1	1	12	1	13	12	-1	14	130
0105	Subcontract Administration	2	0	2	23	1	24	20	-4	25	411
0106	Project Communication Sup	16	6	22	105	19	124	123	-1	180	1,489
	Subtotal Task 01	<u>56</u>	<u>-32</u>	<u>24</u>	<u>676</u>	<u>117</u>	<u>793</u>	<u>851</u>	<u>58</u>	<u>1,028</u>	<u>10,322</u>
A.4	Task 02 - Technical Integration										
0201	Task Mgmt/Proj Integration	11	0	11	83	25	108	90	-18	105	920
0202	Code Design Specification	4	1	5	107	6	113	109	-4	129	1,186
0203	IAEA Model Intercompar.	1	0	1	28	6	34	39	5	51	370
	Subtotal Task 02	<u>16</u>	<u>1</u>	<u>17</u>	<u>218</u>	<u>37</u>	<u>255</u>	<u>238</u>	<u>-17</u>	<u>285</u>	<u>2,476</u>
Task 03 - Source Terms											
0301	Task Management	2	0	2	16	1	17	16	-1	20	165
0302	Closure of Phase I Iodine Rel	1	0	1	28	0	28	29	1	29	253
0303	Airborne Isotopes not I-131	3	0	3	18	0	18	20	2	22	128
0304	Waterborne Isotopes (44-57)	3	0	3	18	0	18	19	1	22	128
0305	Source Term Release Model	4	0	4	14	0	14	29	15	55	419
	Subtotal Task 03	<u>13</u>	<u>0</u>	<u>13</u>	<u>94</u>	<u>1</u>	<u>95</u>	<u>113</u>	<u>18</u>	<u>148</u>	<u>1,093</u>

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

July 1991				FY 1991 to Date (October 1990 - September 1991)							
										TSP	Budgeted
										Approved	FY Labor
										FY Budget	Hours
		Labor \$	Non-Labor \$ (b)	Total \$	Labor \$	Non-Labor \$ (b)	Total \$	Cum Budget	Cum Variance		
Task 04 - Environmental Transport											
0401	Task Management	4	0	4	34	1	35	34	-1	42	400
0402	Atmospheric Transport	26	0	26	212	15	227	257	30	302	3,544
0403	Groundwater Transport	9	0	9	43	3	46	59	13	59	654
0404	Surface Water Transport	15	0	15	64	3	67	97	30	142	1,771
Subtotal Task 04		54	0	54	353	22	375	447	72	545	6,369
Task 05 - Environmental Monitoring Data											
A.5	0501	Task Management	0	0	0	0	0	0	0	0	0
	0502	Vegetation Data	15	0	15	35	0	35	47	12	405
	0503	Monitoring Doc Search/Inver	0	0	0	1	0	1	6	5	139
	Subtotal Task 05		15	0	15	36	0	36	53	17	72
Task 06 - Demographics, Food Consumption, & Agriculture											
0601	Task Management	2	2	4	29	4	33	26	-7	30	365
0602	Prelim Native American Data	8	5	13	71	-2	69	190	121	199	851
0603	Milk Model Refinements	1	3	4	1	4	5	43	38	62	688
Subtotal Task 06		11	10	21	101	6	107	259	152	291	1,904

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

		July 1991			FY 1991 to Date (October 1990 - September 1991)						
		Labor \$	Non-Labor \$ (b)	Total \$	Labor \$	Non-Labor \$ (b)	Total \$	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 07 - Environmental Pathways & Dose Estimates											
	0701 Task Management	5	0	5	27	1	28	23	-5	26	306
	0702 Code Restructure	15	1	16	90	16	106	133	27	158	1,321
	HTDS Doses (d)	0	0	0	0	0	0	0	0	0	0
	0703 Model Parameters	2	0	2	21	0	21	17	-4	25	337
	Subtotal Task 07	<u>22</u>	<u>1</u>	<u>23</u>	<u>138</u>	<u>17</u>	<u>155</u>	<u>173</u>	<u>18</u>	<u>209</u>	<u>1,964</u>
Task 08 - Statistics											
A.6	0801 Task Management	5	-1	4	34	-2	32	32	0	38	213
	0802 Task Assistance	10	-1	9	30	0	30	33	3	52	303
	Subtotal Task 08	<u>15</u>	<u>-2</u>	<u>13</u>	<u>64</u>	<u>-2</u>	<u>62</u>	<u>65</u>	<u>3</u>	<u>90</u>	<u>516</u>
Task 09 - Records Management		<u>3</u>	<u>0</u>	<u>3</u>	<u>29</u>	<u>3</u>	<u>32</u>	<u>32</u>	<u>0</u>	<u>50</u>	<u>1,971</u>
Task 10 - Quality Assurance		<u>1</u>	<u>0</u>	<u>1</u>	<u>29</u>	<u>1</u>	<u>30</u>	<u>28</u>	<u>-2</u>	<u>49</u>	<u>941</u>
Task 11 - Information Resources											
	1101 Task Management	2	1	3	17	1	18	15	-3	21	208
	1102 Declassification	1	0	1	38	1	39	41	2	46	1,584
	1103 Resource Identification/Avail	6	0	6	56	1	57	59	2	79	1,462
	Subtotal Task 11	<u>9</u>	<u>1</u>	<u>10</u>	<u>111</u>	<u>3</u>	<u>114</u>	<u>115</u>	<u>1</u>	<u>146</u>	<u>3,254</u>

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

	July 1991			FY 1991 to Date (October 1990 - September 1991)						
	Labor \$	Non-Labor \$ (b)	Total \$	Labor \$	Non-Labor \$ (b)	Total \$	Cum Budget	Cum Variance	TSP Approved FY Budget	Budgeted FY Labor Hours
Task 12 - TSP Communications Support										
1201 Task Management	1	1	2	17	3	20	31	11	39	591
1202 Video	1	0	1	4	2	6	29	23	29	230
1203 Com Assessment Research	0	0	0	6	0	6	44	38	44	190
1204 TSP Com Subcom Support	0	2	2	4	3	7	16	9	19	324
1205 TSP Database/AV Support	0	3	3	0	14	14	16	2	17	10
Subtotal - Task 12	2	6	8	31	22	53	136	83	148	1,345
Subtotal, HEDR Project Tasks	217	-15	202	1,880	227	2,107	2,510	403	3,061	32,699
Contingency (e)							12	12	23	0
Subtotal, Project Tasks Plus Contingency	217	-15	202	1,880	227	2,107	2,522	415	3,084	32,699
Technical Steering Panel (f)	0	20	20	0	410	410	666	256	800	0
TOTAL	217	5	222	1,880	637	2,517	3,188	671	3,884	32,699

(a) Table reflects FY 1991 budget adjustments approved at the July, 1991 TSP meeting.

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

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

(d) Funding reallocated by the TSP at the April TSP meeting.

(e) Budget not yet allocated.

(f) TSP costs are administered through subcontracts which are reflected as non-labor costs. Actual TSP expenses include both labor and non-labor.

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 RL Public Reading Room
During July 1991**

Appendix B

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

• HAN-35381	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	01/04/51
• HAN-35550	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	01/19/51
• HAN-35851	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/06/51
• HAN-36082	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/20/51
• HAN-36265	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	03/05/51
• HAN-36821	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/04/51
• HAN-36972	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/18/51
• HAN-37275	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	05/04/51
• HAN-37443	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	05/18/51
• HAN-37736	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	06/06/51
• HAN-38001	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	06/21/51
• HAN-40145	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	07/10/51
• HAN-40269	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	07/18/51
• HAN-40549	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	08/06/51
• HAN-40741	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	08/21/51
• HAN-40918	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	09/06/51

Appendix B

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

• HAN-41034	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	09/18/51
• HAN-41279	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/05/51
• HAN-41533	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/19/51
• HAN-41696	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	11/06/51
• HAN-41864	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	11/20/51
• HAN-42084	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	12/05/51
• HAN-42279	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	12/19/51
• HAN-42558	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	01/05/52
• HAN-42803	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	01/18/52
• HAN-43102	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/07/52
• HAN-43291	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/20/52
• HAN-43561	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	03/05/52
• HAN-43761	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	03/20/52
• HAN-44002	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/04/52
• HAN-44253	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/22/52
• HAN-44518	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	05/05/52

Appendix B

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

• HAN-44715	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	05/21/52
• HAN-44997	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	06/06/52
• HAN-45135	DATA ON KRYPTON-85 RELEASE AT HANFORD 1 p.	06/18/52
• HAN-45429	DATA ON KRYPTON-85 RELEASE AT HANFORD 1 p.	06/07/52
• HAN-45656	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	07/18/52
• HAN-45988	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	08/06/52
• HAN-46382	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	08/20/52
• HAN-46524	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	09/02/52
• HAN-46632	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	09/18/52
• HAN-46938	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/07/52
* HW-17660-A	P DIVISION MONTHLY REPORT APRIL, 950 11 p.	05/04/50
* HW-17971-A	P DIVISION MONTHLY REPORT MAY 1950 11 p.	06/06/50
HW-19032	OPERATION INCIDENTS 4 p.	06/05/56
* HW-19577	SKULL RECOVERY FACILITIES FOR BUILDING 234-5 8 p.	12/01/50
* HW-20278-RD	QUARTERLY REPORT-OCTOBER 1949 THRU DECEMBER 1950 AQUATIC BIOLOGY GROUP ROUGH DRAFT 32 p.	01/16/51

Appendix B

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

HW-21497	P-10 PROJECT: LOSSES TO ATMOSPHERE 3 p.	06/02/51
• HW-26025	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/23/52
• HW-26054	DATA ON KRYPTON-85 RELEASE AT HANFORD 1 p.	10/28/52
• HW-26251	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	11/17/52
• HW-26407	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	11/28/52
• HW-26587	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	12/17/52
• HW-26710	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	12/31/52
• HW-26871	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	01/20/53
• HW-27012	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/02/53
• HW-27114	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	02/11/53
• HW-27547	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	03/27/53
• HW-27600	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/01/53
• HW-27732	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	04/15/53
• HW-28018	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	05/11/53
• HW-28132	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	05/21/53
• HW-28266	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	06/02/53

Appendix B

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

• HW-28376	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	06/12/53
• HW-28708	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	07/14/53
• HW-28768	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	07/22/53
• HW-28863	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	07/28/91
• HW-29101	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	08/21/53
• HW-29379	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	09/17/53
• HW-29444	DATA ON KRYPTON-85 RELEASE AT HANFORD 3 p.	09/25/53
• HW-29661	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/16/53
• HW-29668	DATA ON KRYPTON-85 RELEASE AT HANFORD 2 p.	10/19/53
• HW-29985	HANFORD RELEASE CALCULATIONS 3 p.	11/13/53
• HW-30145	HANFORD RELEASE CALCULATIONS 3 p.	12/01/53
• HW-30871	HANFORD RELEASE CALCULATIONS 3 p.	02/16/54
• HW-30872	HANFORD RELEASE CALCULATIONS 3 p.	02/17/54
• HW-30873	HANFORD RELEASE CALCULATIONS 5 p.	02/18/54
• HW-31074	HANFORD RELEASE CALCULATIONS 4 p.	03/10/54
• HW-31362	HANFORD RELEASE CALCULATIONS 4 p.	04/06/54

Appendix B

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

• HW-31659	HANFORD RELEASE CALCULATIONS 4 p.	04/29/54
• HW-31975	HANFORD RELEASE CALCULATIONS 4 p.	05/28/54
* HW-32784	PROGRESS REPORT EARTH SCIENCES GROUND WATER MONITORING ACTIVITIES 10 p.	07/30/54
* HW-32889-E	RADIOLOGICAL SCIENCES DEPT RPT FOR MONTH OF AUGUST 1954 14 p.	09/06/54
• HW-32920	HANFORD RELEASE CALCULATIONS 7 p.	09/01/54
• HW-33875	HANFORD RELEASE CALCULATIONS 7 p.	11/23/55
• HW-34044	HANFORD RELEASE CALCULATIONS 4 p.	12/07/54
• HW-35181	HANFORD RELEASE CALCULATIONS 7 p.	02/11/55
• HW-35668	HANFORD RELEASE CALCULATIONS 2 p.	03/08/55
• HW-36051	HANFORD RELEASE CALCULATIONS 3 p.	04/04/55
* HW-36424	RAD SCI DEPT - RADIATION MONITORING UNIT MONTHLY REPORT FOR APRIL 1955 17 p.	04/29/55
• HW-36727	HANFORD RELEASE CALCULATIONS 3 p.	05/16/55
* HW-36929	RAD SCI DEPT - RADIATION MONITORING UNIT MONTHLY REPORT FOR MAY 1955 16 p.	05/31/55
• HW-37495	HANFORD RELEASE CALCULATIONS 5 p.	06/23/55
* HW-38375-E	RADIOLOGICAL SCIENCES DEPT RPT FOR MONTH OF JULY 1955 9 p.	08/05/55

Appendix B

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

• HW-39251	HANFORD RELEASE CALCULATIONS 1 p.	09/29/55
• HW-39606	HANFORD RELEASE CALCULATIONS 1 p.	10/21/55
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* HW-40693	RADIOLOGICAL SCIENCES DEPT MONTHLY SECTION RPTS DECEMBER 1955 27 p.	01/06/56
* HW-41205-E	RADIOLOGICAL SCIENCES DEPT REPORT FOR MONTH OF JANUARY 1956 8 p.	02/06/56
• HW-41382	HANFORD RELEASE CALCULATIONS 1 p.	02/10/56
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* HW-42626-E	RADIOLOGICAL SCIENCES DEPT REPORT FOR MONTH OF APRIL 1956 9 p.	05/04/56
* HW-42710	RSD - RADIATION MONITORING UNIT MONTHLY REPORT APRIL 1956 15 p.	04/30/56
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* HW-45114	RADIOLOGICAL SCIENCES DEPT MONTHLY SECTION REPORT AUGUST 1956 28 p.	09/07/56

Appendix B

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

* HW-45115-E	RADIOLOGICAL SCIENCES DEPT REPORT FOR MONTH OF AUGUST 1956 7 p.	09/07/56
* HW-46368	RADIATION MONITORING REPORT OCTOBER 1956 21 p.	10/31/56
* HW-47657	RADIATION MONITORING OPERATION REPORT FOR DECEMBER 1956 20 p.	12/31/56
* HW-48842	HANFORD LABS OPERATION REPORT FEBRUARY 1957 7 p.	03/04/57
* HW-49024	CHEMICAL PROCESSING WASTE LOSS DATA 1 p.	03/13/57
* HW-50586	RADIATION MONITORING OPERATION REPORT FOR MAY 1957 18 p.	05/31/57
* HW-51419	RECOVERY OF PLUTONIUM FROM STORED HANFORD WASTES 4 p.	07/30/57
* HW-51750	PROJECT PROPOSAL - WATER PLANT EXPANSION-100KE AND KW 8 p.	09/06/57
* HW-52493	CURRENT INVENTORY OF HANFORD WASTES 3 p.	09/16/57
* HW-54022-RD	WASTE STORAGE REQUIREMENTS FOR CHEMICAL PROCESSING DEPARTMENT 6 p.	12/02/57
* HW-54408	RADIATION MONITORING OPERATION REPORT FOR DECEMBER 1957 12 p.	12/31/57
* HW-54722	CHEMICAL PROCESSING DEPT PROCESS WASTE STORAGE PERFORMANCE 1957 4 p.	01/27/58
* HW-54750	WASTE STORAGE REQUIREMENTS FOR CHEMICAL PROCESSING DEPT 7 p.	01/28/58
* HW-55183	FILTERED WATER CROSS-TIE, 183-B AND 183-C -PROJECT PROPOSAL 11 p.	03/27/58
* HW-63765	COLUMBIA RIVER SCALE MODEL 11 p.	02/12/60

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HW-89079	DAILY OPERATING CONDITIONS 100 AREAS (B,D,F & H) OCTOBER 1948 - DECEMBER 1949 59 p.	12/31/49
HW-89080	DAILY OPERATING CONDITIONS 100 AREAS 1950 64 p.	12/31/50
HW-89081	DAILY OPERATING CONDITIONS 100 AREAS 1951 72 p.	12/31/51
HW-SA-3073	METABOLISM OF Te-132 - I-132 IN LACTATING SHEEP 10 p.	08/06/63
* MED-1001	100-F AREA PRE-START-UP LOGS - DAILY DIARY 141 p.	08/03/45
* MED-1002	100-B DAILY DIARY 176 p.	06/30/45
* MED-1003	100-D AREA DAILY DIARY 209 p.	12/17/44
* MED-1004	100-B AREA DAILY DIARY 141 p.	08/12/44
PNL-7274-HEDR	COMPUTATIONAL MODEL DESIGN SPECIFICATION FOR PHASE 1 OF THE HANFORD ENVIRONMENTAL DOSE RECONSTRUCTION PROJECT 53 p.	07/03/91
PNL-7600-PT2	PACIFIC NORTHWEST LABORATORY ANNUAL REPORT FOR 1990 TO THE DOE OFFICE OF ENERGY RESEARCH 113 p.	02/20/91
PNL-7600-PT3	PACIFIC NORTHWEST LABORATORY ANNUAL REPORT FOR 1990 TO THE DOE OFFICE OF ENERGY RESEARCH 45 p.	04/20/91
PNL-7600-PT4	PACIFIC NORTHWEST LABORATORY ANNUAL REPORT FOR 1990 TO THE DOE OFFICE OF ENERGY RESEARCH 77 p.	03/02/91

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

PNL-7600-PT5	PACIFIC NORTHWEST LABORATORY ANNUAL REPORT FOR 1990 TO THE ASSISTANT SECRETARY FOR ENVIRONMENT, SAFETY, HEALTH, AND QUALITY ASSURANCE 55 p.	05/20/91
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•Declassified by Secretary of Energy Watkins' directive.

*Declassified in 1991 by earlier guidance.

ADDENDUM

These documents on krypton-85 releases at Hanford were declassified in 1991 under the guidelines of Secretary of Energy Watkins' directive. They are not yet in the RL Public Reading Room. However, the data from these reports have been incorporated into HAN-62263, which is in the RL Public Reading Room in Richland, Washington.

These calculations were a part of the Atomic Energy Commission Department of Research and Development effort to estimate the amounts of radioactive noble gases released by Hanford operations. Noble gases such as krypton and xenon do not react with other materials; therefore, they remain in the atmosphere until they decay.

HAN-57166	Hanford Release Calculations	11/23/54
HAN-57305	"	12/07/54
HAN-58010	"	02/11/55
HAN-58257	"	03/08/55
HAN-58689	"	04/04/55
HAN-59086	"	05/16/55
HAN-59474	"	06/23/55
HAN-60376	"	09/29/55
HAN-60625	"	10/21/55
HAN-61529	"	02/10/56
HAN-61652	"	02/27/56
HAN-62429	"	05/15/56

Appendix C

HEDR Publications - July 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 1991 will be included in the September 1991 report.

Appendix C

HEDR Publications - July 1991(a)

Title	Author	Date Issued	Publication No.	Additional Information	Status
FY 1992 Task Plans for the Hanford Environmental Dose Reconstruction Project	Shipler, DB	7/91	PNL-7757 HEDR		To TSP for review 7/91
FY 1993 Task Plans for the Hanford Environmental Dose Reconstruction Project	Shipler, DB	7/91	PNL-7760 HEDR		To TSP for review 7/91
FY 1994 Task Plans for the Hanford Environmental Dose Reconstruction Project	Shipler, DB	7/91	PNL-7759 HEDR		To TSP for review 7/91
2 FY 1995 Task Plans for the Hanford Environmental Dose Reconstruction Project	Shipler, DB	7/91	PNL-7761 HEDR		To TSP for review 7/91
Air Pathway Report	HEDR staff	7/91	PNL-7412 HEDR Rev. 1	Presents Phase I results	Approved by the TSP and published final 7/91
Columbia River Pathway Report	HEDR Staff	7/91	PNL-7411 HEDR Rev. 1	Presents Phase I results	Approved by the TSP and published final 7/91

(a) HEDR publications identified in Appendix C are available in the RL Public Reading Room within 30 days of the issuance of this report.

Title	Author	Date Issued	Publication No.	Additional Information	Status
Selection of Dominant Radionuclides for Phase I of the Hanford Environmental Dose Reconstruction Project	Napier, BA	7/91	PNL-7231 HEDR		Approved by the TSP and published final in 7/91
Computational Model Design Specification for Phase I of the Hanford Environmental Dose Reconstruction Project	Napier, BA	7/91	PNL-7274 HEDR		Approved by the TSP and published final in 7/91
Dose Estimate Variability Caused by Air Model Uncertainties	Simpson, JC	7/91	PNL-7737 HEDR		To TSP for review 7/91

Appendix D

HEDR Presentation Handouts to the TSP - July 1991

Appendix D

HEDR Presentation Handouts to the TSP - July 1991

Title	Author	Date Issued	Publication No.	Additional Information
Battelle Status of Technical Work	Shipler, DB et al.	7/91	PNL-SA-19752S HEDR	Presented at the TSP meeting, July 10-13, 1991, Pasco, WA

Appendix E

HEDR-Related Publications and Presentations - July 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 listing for FY 1991 will be included in the September 1991 report.

No HEDR-related publications or presentations were generated in July 1991.

Appendix F
Communications Log - July 1991

Appendix F
Communications Log - July 1991

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
DB Shieler/PNL	JS Stohr/TSP staff	Phone	Inter-tribal meeting agenda
WA Bishop/TSP	DB Shieler/PNL	Phone	Tribal budget for FY 1992
R Brich/RL	DB Shieler/PNL	Phone	HEDR/CDC budget process
JE Till/TSP	DB Shieler/PNL	Phone	Proposed scope and budget
B Shleien/TSP	DB Shieler/PNL	Phone	Databases, funding
R Brich/RL	DB Shieler/PNL	Phone	DOE funding process
DB Shieler/PNL	M Sage/CDC	Phone	CDC/Battelle contracting process
ML Blazek/TSP	DB Shieler/PNL	Phone	HEDR air modeling vs. WNP-2 modeling
DB Manders/ Wash. State Dept. of Health	DB Shieler/PNL	Phone	Hanford information advisory board
DB Shieler/PNL	R Brich/RL	Phone	Hanford emergency planning and air modeling
DB Shieler/PNL	JE Till/TSP	Phone	Dose cut-off, project schedule, declassification
B Shleien/TSP	DB Shieler/PNL	Phone	Scoping decisions and dose limit
JE Till/TSP	DB Shieler/PNL	Phone	Project schedule review
L Sewell/CDC	DB Shieler/PNL	Phone	TSP workshop agenda, Native American contracts
JE Till/TSP	DB Shieler/PNL	Phone	Project schedule review and comments

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
JM Daer/PNL	JS Stohr/TSP staff	Phone	Transposed document numbers on Phase I audience analysis report
Lowando/ Umatilla Tribe	SM Finch/PNL	Phone	Contracts for attendance and reimbursement for TSP meetings
SM Finch/PNL	MA Robkin/TSP	Phone	Reinstated mag card
B Shleien/TSP	SM Finch/PNL	Phone	Request for slides, workshop dates
DB Manders/ Wash. State Dept. of Health	SM Finch/PNL	Phone	RFP for resource center
JE Till/TSP	SM Finch/PNL	Phone	Scope for FY 1993 task plan, letter on Battelle policy
B Shleien/TSP	SM Finch/PNL	Phone	Slides, additional funding on subcontract, paper on scoping document and dose cut-off limits
S Walbreck/ FHCRC	SM Finch/PNL	Phone & fax	Badging information for FHCRC staff for meeting at PNL
AP Slickpoo/TSP	SM Finch/PNL	Phone	Native American training session, July 29-30
WA Bishop/TSP	SM Finch/PNL	Phone	TSP funding
JS Stohr/TSP staff	SM Finch/PNL	Phone	Status of FY 1991 supplement, invoices, justification for indirect charges
CM Heeb/PNL	OH Greager/ retired Hanford worker	Phone	Experience in the early 1944-1947 period, dissolver operations
CM Heeb/PNL	WK McCready/ retired Hanford worker	Phone	Experience in the early 1944-1947 period, dissolver operations
CM Heeb/PNL	WK Wright/ retired Hanford worker	Phone	Experience in the early 1944-1947 period, dissolver operations

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
CM Heeb/PNL	JP McBride/ retired Hanford worker	Phone	Experience in the early 1944-1947 period, dissolver operations
Reactor Shielding Information Center/ORNL	CM Heeb/PNL	Phone	Request for copy of PNL-7223-HEDR
HA Haerer/Golder	CM Heeb/PNL	Phone	Information on early iodine-131 release calculation
HA Haerer/Golder	CM Heeb/PNL	Phone	Use of Hanford reports in calculating early iodine-131 in April and May of 1945
TA Ikenberry/ PNL	WA Bishop/TSP	Phone	Release of Native American food consumption data
TA Ikenberry/ PNL	D Powauke/Nez Perce Tribe	Fax	Information to be included on Nez Perce survey form
KJ Kopecky/TSP	TA Ikenberry/ PNL	Phone	Fruit and grain pathways for data gathering, HTDS studies
D Powauke/Nez Perce Tribe	TA Ikenberry/ PNL	Phone	Additions to Native American survey
B Shleien/TSP	SP Gydesen/PNL	Phone	Documents addressing radiation dosage determination
SP Gydesen/PNL	H Burgess/GE Nuclear	Phone	Title listing of GE holdings that might address Hanford historical operations or environmental issues
K Niles/TSP staff	GL Harvey/PNL	Phone	Video contract
GL Harvey/PNL	K Niles/TSP staff	Phone	Video contract
ML Blazek/TSP	GL Harvey/PNL	Phone	Newspaper article
M Power/TSP staff	GL Harvey/PNL	Phone	Communications assessment research
K Niles/TSP staff	GL Harvey/PNL	Phone	Communications assessment research
M Power, K Niles/TSP staff	GL Harvey/PNL	Phone	Communications assessment research

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
AH McMakin/PNL	JS Stohr/TSP staff	Phone	Document review plan
AH McMakin/PNL	R Brich/RL	Fax	D Shipler's comments on DOE HEDR fact sheet

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Oregon Department of Energy
625 Marion Street N.E.
Salem, OR 97310

G. G. Caldwell
Director
Tulsa City-County Health Dept
4616 East 15th Street
Tulsa, OK 74112

S. N. Davis
Dept. of Hydrology & Water Resources
Bldg. 11
University of Arizona
Tucson, AZ 85721

N. J. Germond
224 Iron Mountain Blvd.
Lake Oswego, OR 97034

P. C. Klingeman
Civil Engineering Dept.
Oregon State University
Corvallis, OR 97331-2302

K. J. Kopecky
Fred Hutchinson Cancer
Research Center
1124 Columbia Street
Seattle, WA 98104

P. D. McGavran
Dept. of Health and Welfare
450 W. State Street, 4th Floor
Boise, ID 83720-5450

R. L. Morrill
Dept. of Geography
DP-10
University of Washington
Seattle, WA 98195

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Radiological Sciences SB-75
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Seattle, WA 98195

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Dept. of Health
MS EY-12
1408 State St.
Olympia, WA 98504

R. Mathias, S-1
Department of Energy
Forrestal Bldg. Room 7A-257
1000 Independence Ave.
Washington, DC 20585

M. McHugh
Colorado Department of Health
P.O. Box 7302
Crescent Branch Station
Golden, CO 80403

N. Morin
Rocky Flats Program Unit
Environmental Epidemiology Division
Colorado Dept. of Health
4210 E. 11th Ave.
Denver, CO 80220

J. D. Mulder
Public Health Liaison to EPA
U.S. EPA
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Seattle, WA 98101

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Department of Energy
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D. Oliver, R.S., M.P.A.
Hazardous Waste Coordinator
Toxic Substances Section
Dept. of Social & Health Services
LD-11
Olympia, WA 98504

M. Queahpama
Confederated Tribes of the
Warm Springs Reservation
P.O. Box C
Warm Springs, OR 97761

W. J. Roberds
Golder Associates
4104 148th N.E.
Redmond, WA 98052

J. H. Rueben
Nez Perce Tribe
P.O. Box 305
Lapwai, ID 83540

M. Sage
Centers for Disease Control
1600 Clifton Rd.
Mail Stop F-28
Atlanta, GA 30333

D. Saluskin
Confederated Tribes and Bands of
the Yakima Indian Nation
P.O. Box 151
Toppenish, WA 98948

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