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**HANFORD ENVIRONMENTAL DOSE
RECONSTRUCTION PROJECT**

Monthly Report

June 1992

**Prepared for the Technical Steering Panel
and the Centers for Disease Control
under Contract Number 18620**

**Battelle
Pacific Northwest Laboratories
Richland, Washington 99352**

MASTER

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 by Battelle Pacific Northwest Laboratories (BNW) under contract with the Centers for Disease Control (CDC). The Technical Steering Panel (TSP), which is composed of experts in numerous technical fields related to the

project, provides technical direction of the project and represents the interest of the public.

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

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

TABLE 1. Status of Directives^(a)

		<u>Complete</u>	<u>Ongoing</u>
88-1	(a) Proposals		x
	(b) Source Terms		x
88-2	Vegetation		x
88-3	Status Reports		x
88-4	Ground Water		x
88-5	Maps	x	
88-6	Resumes	x	
89-1	Indian Tribes		x
89-2	Bioassay Data	x	
89-3	Document Handling		x
89-4	Reactor Purging		x
89-5	Phased Approach	x (modified 2/14/91)	
89-6	Meeting Materials		x
89-7	Tech Communication		x
89-8	Phase II Planning	x (modified 2/14/91)	
89-9	Project QA Plan		x
89-10	Contracts with Tribes		x (revised annually)
90-1	Project Direction (Task Plans)		x
90-2	Dose Cut-Off Limit	x	
92-1	Demography, Food, and Agriculture Tasks		x

(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 Battelle Pacific Northwest Laboratories under contract with the Centers for Disease Control. The independent Technical Steering Panel (TSP) provides technical direction.

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, Washington, and Idaho, 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 radio-nuclides followed, from release to impact on humans (dose estimates):

- Source Terms
- Environmental Transport
- Environmental Monitoring Data
- Demography, Food Consumption, and Agriculture
- 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 Demography, Food Consumption, and Agriculture 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 is expected to be developed for several special population groups, including Native American tribes in the study area.

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 radio-nuclides. 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 be developed by the Fred Hutchinson Cancer Research Center for individuals included in the Hanford Thyroid Disease Study as a basis for dose estimates.

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 June 1992:

- The contract between Battelle and CDC was signed June 18, 1992. Major issues regarding reconciliation of funding and budgets during the transition from DOE to CDC were partially resolved. Meetings with the parties are planned for July.
- completed work on the monitoring document search and inventory activities through calendar year 1984
- entered monthly source terms data for all reactor and separation plants for the time period 1944-1975 on electronic storage media. Independent, primary reference sources may now be compared efficiently for overlapping time periods to achieve data quality objectives.
- met with CDC, Indian Health Service (IHS), TSP, and Hanford Thyroid Disease Study (HTDS) staff to review the status of tribes' response to Battelle's request for proposed statements of work and discuss the status of CDC's efforts to develop and issue requests for proposals
- provided assistance to the Confederated Tribes of the Umatilla Indian Reservation to aid in their data reduction and entry task
- met with the survey design team to plan and review activities for the agricultural producer's survey being conducted by Washington State University's (WSU) Social and Economic Sciences Research Center (SESRC)
- declassified 296 Hanford-Site-oriented documents, 47 of which are of potential interest/use to the project
- completed coding and testing of the Sun computer versions of the environmental accumulation code DESCARTES and the dose estimation code CIDER to the extent possible with simulated input parameter files

- completed coding and initial testing of the stochastic report generation program (REPGEN)

Major Problems or Changes and Action Taken

All HEDR subcontracts are being reviewed for transfer from the U.S. Department of Energy (DOE) to CDC funding.

The Columbia River work (Milestone 0404B) scheduled for WSU has slipped further and the milk production/distribution report (Milestone 0603D) has been delayed because of the late placement of the CDC contract.

Development of the PARSEL code to handle the selection of the parametric values for the Monte Carlo runs of DESCARTES and CIDER continues to be delayed and will impact documentation milestones, the sensitivity/uncertainty plan, and review. Alternatives are being evaluated.

A senior-level atmospheric scientist has recently joined Battelle. He will report for work by the end of July and will contribute to HEDR atmospheric transport work.

Planned Work for the Next Three Months

- complete project data management plan (Milestone 0204A)
- complete the 1944-1947 iodine-131 release document (Milestone 0302A)
- complete meteorological data report (Milestone 0402D)
- finalize the vegetation data report (Milestone 0502A)
- complete media analysis (Milestone 1203C)
- publish revised FY 1992 Task Plans
- finalize Hanford scenario for publication by the International Atomic Energy Agency

- complete numerical verification of the RATCHET code for 1945
- complete a supplementary letter report of document summaries for the years 1945-1972 covering radioactive contamination of fish, shellfish, and waterfowl from Hanford effluents
- present the paper, "Uncertainty Issues of the Hanford Environmental Dose Reconstruction Project," at the symposium, "Environmental Statistics, Assessment and Forecasting"
- finalize critical decision plan and issue the implementing procedure: HEDR-TP-3, "HEDR Documentation of Critical Decisions"
- complete coding and testing of PARSEL and generate 100 parameter files representing 100 different realizations (combinations of possible input values)

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. Figure A.3 shows Native American research budget status.

Capital Status

The HEDR Project has been approved for \$75K of capital funding for FY 1992. Funding for the \$75K was transferred from RL to PNL in the March 1992 Financial Plan. Majority of equipment has been received and installed. Remaining equipment and upgrades are expected to be received and installed by the end of July.

FIGURE 2. HEDR Project Budget Status - Battelle Pacific Northwest Laboratories

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Task 01 Battelle Project Management

Objective

The objective of the Battelle Project Management Task is to provide project planning, control, and management of Battelle dose reconstruction work in accordance with the Centers for Disease Control (CDC) contract and Technical Steering Panel (TSP) technical direction.

Progress

Milestone 0101D - FY 1992 Updated Task Plans, due April 1992 and completed

- continued revising task plans to incorporate TSP comments

Milestone 0101E - FY 1993 Updated Task Plans, due July 1992 and rescheduled to August 1992

- received expanded versions of FY 1993 task plans from task leaders and began editing and producing the revised version. The expanded version contains technical approaches, data quality objectives, and other detail added to the TSP-approved work scopes.

Other Activities

- traveled to Atlanta to meet with Centers for Disease Control (CDC) staff to agree on the final details of Battelle's contract with the CDC on the Hanford Environmental Dose Reconstruction (HEDR) Project. The contract, which was signed on June 18, funds HEDR work beginning in June 1, 1992 through May 31, 1994.
- attended a HEDR turnover package meeting in Seattle. Representatives included the TSP;

CDC; Hanford Health Information Network (HHIN); states of Washington, Oregon, and Idaho health departments; and the public. Everyone agreed that an agency similar to HHIN (or HHIN itself) would operate the turnover package to calculate individual doses.

- presented papers on aspects of the HEDR Project at the Health Physics Society meeting in Columbus, Ohio

Major Problem Areas or Changes and Action Taken

All HEDR subcontracts are being reviewed for transfer from the U.S. Department of Energy (DOE) to CDC funding.

Milestone 0101E, FY 1993 Updated Task Plans, was rescheduled to August 1992 to allow time to incorporate task leader revisions and CDC contract changes.

Project staff met with task leaders and report authors to discuss the schedule for milestone reports due for the remainder of F 1992. Several of the reports continue to slip; new schedules are being negotiated as necessary.

New staff member S. (Sandra) Cannon was added to the HEDR team as a Technical Communication Specialist; she will edit HEDR reports.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- submit revised FY 1992 Task Plans to the TSP for final approval

- submit revised FY 1993 Task Plans to the TSP for review (Milestone 0101E)
- update the HEDR Project Management Plan (Milestone 0101F) ☐

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 0204A - Letter Report: Data Management Plan, due May 1992 and rescheduled to August 1992

- submitted annotated outline to the HEDR Project Office for review and approval. Drafted initial sections.

Milestone 0204B - Recommendation on Modeling or Monitoring Approach for River Pathways, due June 1992 and rescheduled to July 1992

- received comments on initial draft, prepared final version, and submitted report for clearance. The recommendations will be discussed at the July TSP meeting.

Milestone 0205B - Letter Report on Key Radionuclides, due May 1992 and rescheduled to September 1992

- worked with staff of Tasks 06 and 07 to develop a screening tool to provide a ranking of the importance of various exposure pathways via crop ingestion

Other Activities

- continued internal revision of the "white paper" on the HEDR modeling approach, which was discussed at the April TSP meeting. A final draft was prepared as a letter to the TSP.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused by staff support directed to other tasks earlier in the year. Current staffing levels are reducing the variance.

Planned Work for the Next Three Months

- finalize Hanford scenario for publication by the International Atomic Energy Agency
- continue coordinating efforts with Hanford Thyroid Disease Study (HTDS) personnel
- complete project data management plan (Milestone 0204A)
- prepare model parameter distributions strategy (Milestone 0205D) □

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 August 1992

- made preparations for the final release model runs. Known hourly profiles for iodine-131 releases were installed in the release model. Statistical verification was largely completed using a release model preliminary output data file. Results of the output data file provided assurance that the intended distribution functions were indeed produced by the release model for 100 Monte Carlo "realizations" of hourly iodine-131 releases.

Milestone 0307A - Letter Report: Hanford Operations, 1994 - 1991, due September 1992 and rescheduled to FY 1993

- entered monthly source terms data for all reactor and separation plants for the time period 1944 - 1975 on electronic storage media. Independent, primary reference sources may now be compared efficiently for overlapping time periods to achieve data quality objectives.

Surface Water Releases (Subtask 0304)

- continued the calculation of monthly radionuclide releases to the Columbia River from primary reference sources. Data are

available in the literature, albeit with some gaps, starting in 1951, but are reported in concentration units instead of curies released in some reports. All data are being put on electronic media in consistent units using reactor flow rate data.

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun was caused partly by late billing from other Hanford contractors.

Planned Work for the Next Three Months

- complete the 1944 - 1947 iodine-131 release document (Milestone 0302A)
- continue constructing database on reactor and separation facility operations
- continue work on river release estimation methods ☐

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 is studied.

Progress

Milestone 0402A - Wind Field Modeling White Paper, due FY 1991 and rescheduled to August 1992

- began revision of draft report. Model runs to support the revision will be made when the revised source term data set is received.

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

- continued entry of meteorological data for 1944 - 1947

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

- made final corrections in response to TSP comments and completed a final quality read-through. M. Freshley is contacting S. Davis (TSP) to discuss revisions made to the document.

Milestone 0404A - Columbia River Pathway Summary Report, due December 1991, rescheduled to April 1992, and completed

- received comments from seven TSP members during June. P. Klingeman (TSP) will solicit review comments from the remaining

members during the Astoria TSP meeting or determine whether they are going to submit any comments.

Milestone 0404B - Letter Report: Columbia River Conceptual Model, due September 1992 and rescheduled to FY 1993

- began extending the river map downstream from McNary Dam to the coastal area by computer graphics. The map will also serve as a working map in support of the FY 1992-1993 work.
- received the cost proposal from WSU (M. Richmond) on June 26. Battelle sub-contracts has set a target date for the completion of the Battelle review, including cost-price analysis, on July 24. Washington State University (WSU) will sign off after that if all goes well.

Major Problem Areas or Changes and Action Taken

Staff limitations continue to delay work in several areas in atmospheric modeling. A senior-level atmospheric scientist has recently joined Battelle; he will report for work by the end of July and will contribute to HEDR atmospheric transport work.

The work scheduled for WSU has slipped further because of the late placement of the CDC contract. The letter report, Milestone 0404B, will be delayed into October 1992.

Variance

The cumulative cost overrun on Task 0402A (Atmospheric Transport) is the result of 1) additional time spent on the code documentation during November and December, 2) addition of a second person entering meteorological data, and 3) the effort required to make 100 runs of the RATCHET code for 1945 to provide input for use in sensitivity and uncertainty evaluation of the DESCARTES and CIDER codes. The data entry is ahead of schedule.

Planned Work for the Next Three Months

- rerun RATCHET for 1945, complete numerical verification of the code, start preliminary sensitivity studies on the code

- continue work on databases for use with RATCHET
- complete meteorological data report (Milestone 0402D)
- complete the wind-field modeling report (Milestone 0402A)
- place subcontract with WSU for Columbia River work □

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 FY 1991 and rescheduled to August 1992

- continued to resolve internal peer review comments on the report, "HEDR Phase I Summaries for Vegetation, River Water, Drinking Water and Fish Radionuclide Concentration Data"

Milestone 0502A - Vegetation Data Report (1945-1951), due FY 1991 and rescheduled to August 1992

- sent a complete draft of the report to editing and text processing

Milestone 0502B- Letter Report: Vegetation Monitoring Data (1949-1951), Bias and Data Correction, due February 1992 and rescheduled to August 1992

- sent a complete draft of the report to editing and text processing

Monitoring Document Search and Inventory (Subtask 0503)

- completed work on the monitoring document search and inventory activities through calendar year 1984

Major Problem Areas or Changes and Action Taken

Milestones 0501A and 0502A continue to slip. New staff support has been identified to resolve internal review comments for these reports and expedite their issuance.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- complete a supplementary letter report of document summaries for the years

1945 - 1972 covering radioactive contamination of fish, shellfish, and waterfowl from Hanford effluents

- submit Phase I report (Milestone 0501A, Environmental Monitoring Data Final Report) to the TSP

- finalize the vegetation data report (Milestone 0502A)
- complete review draft of the letter report on vegetation monitoring data (1949-1951) bias and data correction (Milestone 0502B) ☐

Task 06 Demography, Food Consumption, and Agriculture

Objective

The objective of the task is to develop the population and agricultural data needed to estimate the population doses that may have resulted from historical releases of radioactive materials from operations at the Hanford Site.

Progress

Milestone 0602B - Letter Report: Status of Food Consumption Methodology, due March 1992, rescheduled to May 1992, and completed

- met with J. Simpson and R. Gilbert of Task 08 on strategy for performing the food consumption analysis. We agreed that the statistical test known as "Kolmogorov-Smirnov" would be appropriate for determining differences in consumption across regions, urbanizations, and food types. This type of analysis will tell us if we can combine consumption data from regions beyond the west.
- began working with R. Bates of Task 08 to start analyzing the data already in-house and to familiarize him with the food consumption subtask
- continued efforts to acquire the summer and fall 1977-1978 National Food Consumption Survey (NFCS) raw data on magnetic tape from the National Technical Information Service (NTIS). We have received the 1965

spring NFCS raw data on magnetic tape from Health and Nutrition Information Service (HNIS).

- met with D. Stewart (Task 10) for assistance in meeting quality assurance (QA) requirements. Identified the required documentation relevant to activities in the food consumption subtask.
- received and responded to a memo from TSP member D. Price with additional comments on the food consumption methodology report.
- received a letter from TSP member R. Morrill endorsing D. Price's request for a distinction for infants and for adults, and suggesting that Task 06 staff talk to one or two experts from the Hispanic community. (This subject will be addressed in future HEDR work to be carried out for special populations.)

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

- submitted report, "Milk Production and Distribution in Low-Dose Counties for the Hanford Thyroid Disease Study" to the TSP and CDC

Milestone 0603C - Assessment of Fruit and Vegetable Pathways, 1944-1957, due June 1992 and rescheduled to September 1992

- analyzed secondary data, solicited expert information, and began writing the letter report on fresh vegetables and fruits
- traveled to WSU to interview Dr. A. Harrington. From this meeting we decided to solicit quantitative information on the distribution of fruits and vegetables from Dr. Harrington. This decision was based on his extensive experience as a professor in agricultural marketing at WSU in the 1940s and 1950s. We continue to try to identify additional individuals knowledgeable of the distribution processes in the HEDR study area for 1945 and 1951.

Milestone 0603D - Milk Production/Distribution Report, 1944-1991, due FY 1993

- sent a request for proposal to J. Tamai and D. Moore of WSU's Social and Economic Sciences Research Center (SESRC) to support work in conducting the face-to-face interview for the producers' survey, to compile the producer interview information, to gather information on milk distribution, and to support the expert elicitation activities of Task 06
- worked on revising the producers' questionnaire to reduce the time for conducting the interview to approximately 90 minutes
- received from SESRC a briefing of the work that has been conducted with the Washington State Agricultural Statistic group

Native American Data (Subtask 0605)

- took part in a meeting with CDC, Indian Health Service (IHS), TSP, and HTDS staff to 1) review the status of tribes' response to Battelle's request for proposed statements of work to cover work orders through the end of FY 1992, 2) discuss the status of CDC's efforts to develop and issue requests for proposals for work beginning in FY 1993, and 3) set an agenda for upcoming Native American Working Group meetings. Met with CDC and HTDS staff in a follow-up meeting a week later to discuss the specific wording of

the work requirements section of the CDC request for proposals to the tribes.

- contacted tribal representatives to determine the status of their efforts to develop proposed statements of work
- provided assistance to the Confederated Tribes of the Umatilla Indian Reservation to aid in their data reduction and entry task
- continued reviewing relevant published and unpublished information sources that will help to independently assess the reliability, validity, and uncertainty associated with key informant and sample survey interview data regarding food consumption and mobility patterns. A special assessment of Native American infants' milk consumption is under way.

Major Problem Areas or Changes and Action Taken

The date for completion of the milk production/distribution report (Milestone 0603D) is now uncertain, but may be delayed to September 1993 or later. The delay comes from a delay in signing the Battelle/CDC contract and from a change in the requirement that the Office of Management and Budget (OMB) approve the questionnaire. CDC has been contacted to determine whether OMB clearance can be expedited.

The letter report on assessment of fruit and vegetable pathways (Milestone 0603C) is now scheduled for September 1992. This variance from the original schedule was caused by a delay in initiating the work. Also staff had to focus efforts during May on other TSP-directed activities.

Variance

The cumulative cost underrun is caused by delayed contracting with and invoicing of WSU agricultural survey work.

Planned Work for the Next Three Months

- negotiate and sign a subcontract with WSU/SESRC for support work
- obtain OMB clearance of the survey of approximately 400 farmers who farmed in the HEDR study area during 1945

- review reports concerning Native American milk consumption and culturally patterned nursing practices
- review feasibility of alternatives for representing spatial distribution of tribal members' residential locations, using unpublished residential location data compiled in the early 1960s for the Colville, Yakima, and Nez Perce tribes
- participate in discussions regarding sensitivity analysis and model validation techniques
- review tribal work plans for the remainder of FY 1992, including additional visits to tribes encountering difficulties in completing their work plans
- attend the Native American Working Group meeting in Seattle and the July TSP meeting ☐

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 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 0702B - Documentation Report of Population Dose Model, Major Pathways, due September 1992

- continued developing this report, which will include three major sections: the basic concepts and conceptual models, a user's manual, and a programmer's guide. The document will discuss the DESCARTES and CIDER models and computer coding as well as the parameter selection code (PARSEL) and the report generation code (REPGEN). Because of the size of the document, it will be issued in two volumes. Responses to comments from the TSP and other reviewers on the original dose code report PNL-7993 HEDR have been formulated, and these comments are being factored into the revised report as appropriate.

Milestone 0703B - Letter Report: Iodine-131 Parameters and Dose Factors, Revised Model, due February 1992 and rescheduled to September 1992

- continued documenting parameter values and descriptions in the controlled manual format
- continued work on Milestone 0703B. Considerable effort was spent resolving values for non-isotope-dependent parameters. Task 07 staff travelled to WSU in Pullman to research the older scientific and regional crop literature.

Pathways and Dose Code Development and Documentation (Subtask 0702)

- modified the stochastic PARSEL code to improve the method of sampling from discrete

diets for both animal-feed consumption and human-food consumption. Because of these modifications and other changes in parameter distributions and dependencies, completion of PARSEL has been delayed.

- completed coding and testing of the Sun computer versions of the environmental accumulation code DESCARTES and the dose estimation code CIDER to the extent possible with simulated input parameter files
- completed coding and initial testing of the stochastic REPGEN program. Final testing will occur when a full set of 100 realizations (simulation runs) of DESCARTES and CIDER has been made.
- maintained coordination with the Subtask 0703 staff to ensure that parameter revisions were incorporated into the PARSEL code
- prepared a computerized database to track and cross-reference the sources of parameter data and information. This database also contains records on other documents used in the project.

Major Problem Areas or Changes and Action Taken

Continual accelerated spending and delays in development and testing of the DESCARTES and CIDER codes are impacting 1) testing of the HEDRIC code, 2) development of the sensitivity/uncertainty analysis plan, and 3) preparations for the sensitivity/uncertainty plan review meeting. Alternatives are being evaluated.

Pending input from Native American tribes, no doses will be calculated.

Variance

The cumulative cost overrun was caused by activities in Subtask 0702 where four staff members are engaged in completing computer coding for DESCARTES, CIDER, PARSEL, and REPGEN.

Planned Work for the Next Three Months

- complete coding and testing of PARSEL and generate 100 parameter files representing 100 different realizations (combinations of possible input values). These files, together with the corresponding 100 realizations of air concentration and surface deposition data from the atmospheric transport code RATCHET, will constitute the input for the initial 100 runs of DESCARTES and CIDER. These runs will cover the entire year of 1945 for a selected set of locations.
- compute doses for representative individuals from a limited set of age/sex/lifestyle groups. The report generator program REPGEN will then be used to report the model outputs. These initial results will be used only for purposes of developing a draft sensitivity/uncertainty analysis plan and for model verification activities.
- subject the codes and documentation to a Final Internal Development Review in fulfillment of software QA requirements. A test plan that is currently being written to specify formal verification testing of DESCARTES and CIDER will be completed.
- continue work on the iodine-131 parameters and dose factors report for revised air pathway codes (Milestone 0703B)
- continue work on the report documenting air exposure pathways and population dose model for major pathways (Milestone 0702B) □

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 FY 1991 and rescheduled to July 1992

- continued internal clearance of this report and prepared to present it at the July TSP meeting

Milestone 0803A - Letter Report: Project Sensitivity/Uncertainty Analysis Plan, due August 1992 and rescheduled to September 1992

- continued preparing for the review meeting on the HEDR sensitivity and uncertainty analysis plan, Pasco, Washington, September 15-17, 1992

General Statistics Support (Subtask 0802)

- participated in meetings at WSU and Battelle of the survey design team to plan and review activities for the agricultural producer's survey being conducted by WSU's SESRC. This work supports Milestone 0603D, Milk Production/Distribution Report, 1944-1991.

- began internal clearance of the paper, "Uncertainty Issues of the Hanford Environmental Dose Reconstruction Project," for presentation at the symposium, "Environmental Statistics, Assessment and Forecasting" at the American Chemical Society National Meeting, August 23-27, in Washington, DC. This paper will be published in the proceedings of the symposium.

- assisted Subtask 0602 with food consumption estimates and database of individual diets

Analysis of Model Reliability (Subtask 0803)

- assisted Task 03 with code verification and quality assurance of the source term release model
- assisted Subtask 0402 with sensitivity and uncertainty analysis of the RATCHET code
- assisted Subtask 0702 with code verification and QA of the DESCARTES and CIDER codes

- continued planning sensitivity and uncertainty analysis for the DESCARTES and CIDER codes
- upgraded computer to a two-processor Sun 690. Two additional processors will be installed in July. Eight new 1.75-gigabyte disks and three 5-gigabyte tape backup units have also been added to the computer system.

Major Problem Areas or Changes and Action Taken

Delays in coding and testing of the DESCARTES and CIDER codes are impacting progress in developing the sensitivity/uncertainty analysis plan and preparations for the associated review meeting in September. Alternatives are being evaluated.

Variance

The cumulative cost underrun continues to be reduced with staff now available and working.

Planned Work for the Next Three Months

- send Milestone 0802A, Iodine-131 Conversion Factor Report, to the TSP for review and comment and present the report at the TSP meeting in Astoria, Oregon

- prepare a draft of the Milestone 0803A, Letter Report: Project Sensitivity Uncertainty Analysis Plan
- continue planning for the sensitivity/uncertainty analysis workshop
- continue close interactions with the Assistant Project Manager for Technical Integration and other staff to conduct uncertainty and sensitivity analysis
- continue to serve on the survey design team that supports the survey of agricultural producers being conducted by WSU
- finalize the strategy for uncertainty and sensitivity analyses and the elicitation of expert opinion for HEDR dose models
- present the paper, "Uncertainty Issues of the Hanford Environmental Dose Reconstruction Project," at the symposium, "Environmental Statistics, Assessment and Forecasting," in August
- review draft manuscripts of HEDR Project reports □

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 - 90 records totalling 1,330 pages
- verified, processed, and stored project records - 48 records totalling 1,145 pages
- transferred three packages of records to the U.S. Department of Energy, Richland Field Office (RL) Public Reading Room - 19 records totalling 660 pages
- completed revision 4 of the HEDR Records Inventory and Disposition Schedule/File Index (RIDS) and forwarded it to the HEDR Project Office for approval
- prepared files and consolidated records into one central file system for Task 06

Major Problems or Changes and Action Taken

None.

Variance

The cumulative cost underrun resulted from records management activities that were less than expected.

Planned Work for the Next Three Months

- continue processing incoming project records
- continue transferring processed project records to the RL Public Reading Room
- provide training to project staff on records management requirements ☐

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

- planned and performed QA assessment of certain tasks to evaluate the implementation of the HEDR QA Plan and the implementation of the required QA procedures with emphasis on the software QA procedures. The tasks included in the review were the following: Task 03, Source Terms; Task 05, Environmental Monitoring Data; Task 06, Demography, Food Consumption and Agriculture; Task 07, Environmental Pathways and Dose Estimates; and Task 08, Statistics. Results of this evaluation have been provided to the HEDR Project manager in a letter report.
- reviewed and provided comments on two reports to ensure that data quality objectives were included and addressed adequately: "Selected Hanford Reactor and Separations Operating Data for 1960-1964," and "Uncertainty and Sensitivity Analysis of Historical Vegetation Iodine-131 Measurements in 1945-47"
- continued software QA training for new HEDR staff through individual meetings with the staff

Major Problem Areas or Changes and Action Taken

None.

Variance

The cumulative cost underrun resulted from fewer quality assurance activities than expected.

Planned Work for the Next Three Months

- finalized critical decision plan and issue the implementing procedure: HEDR-TP-3, "HEDR Documentation of Critical Decisions"
- develop action tracking procedure to be used for documenting results of technical staff meetings
- continue performing oversight activities to check for compliance to project technical, QA, and data quality objective requirements and for implementation of corrective actions for the last audit
- issue revised QA project plan for HEDR □

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 micro-computer-based tracking system for ready retrieval of historical information.

Progress

Milestone 1102A, Letter Report: Declassified, Prioritized Document List, due September 1992

- declassified 296 Hanford-Site-originated documents, 47 of which are of potential interest/use to the project. Table 11.1 shows the status of declassification to date. Approximately 15 declassifications requested by the TSP and the public are yet to be completed.

Milestone 1103A, Letter Report: Status of Document Search and Data Quality Objectives Efforts, due September 1992

- responded to a rapid turnaround on two requests from the TSP for nearly 50 documents relative to the active particle contamination problem in the late 1940s
- verified references in several HEDR reports
- assisted TSP member M. Robkin during a four-day stay in Richland to review documents relative to his summer assignment for the TSP
- collected additional daily separations process data and related information. The year 1953 was completed this month.

- added new citations to the tracking system that now contains nearly 5500 citations
- provided the RL Reading Room with 86 documents (~9,000 pages) of potential interest/use in the HEDR Project. A title listing of these reports is given in Appendix B.

RL Public Reading Room Activity

The Reading Room had six HEDR patrons and distributed 11 HEDR reports.

Major Problem Areas or Changes and Action Taken

The preparation of title listings of Hanford-Site-originated reports that are currently classified and the addressing of operations for years 1961-1972 continue to await directions and funding from the CDC through RL.

Variance

No significant cumulative variance.

TABLE 11.1. Declassification of Hanford-Originated Documents

<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 through June 1992 (FY 1992)	<u>1553</u>	<u>200</u>
TOTAL (March 1987 - June 1992)	3604	1276

(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.

Planned Work for the Next Three Months

- continue providing input to the information resources tracking database 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
- 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
- identify and retrieve data on ruthenium releases from separations processes
- support TSP members' access, retrieval, and review of Hanford historical documents □

Task 12 TSP Communications Support

Objective

The objective of this task is to assist the TSP in developing competent 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 1203C - Letter Report: Mid-Year Media Analysis, 1992, due June 1992 and rescheduled to July 1992

- began review and organization of 1992 newsclips (January-June) in preparation for mid-year media analysis

Other Activities

- participated in HEDR Project turnover package meeting and TSP Communications Subcommittee meetings held in Seattle
- provided information and assistance to TSP Communications Subcommittee staff in preparation of the fact sheets on declassification and sensitivity
- provided copies of the Hanford environmental monitoring report for calendar year 1990 to three TSP members as requested
- reviewed TSP July newsletter materials
- reviewed Information Resources (Task 11) draft reports regarding historical document

declassification and Hanford reactor and separations operating data

- provided general HEDR Project information to H. Bolton, Tioga, Louisiana
- provided surface-water pathway (PNL-8083 HEDR, April 1992), ground-water pathway (PNL-7978 HEDR, January 1992), and Hanford Site environmental report for 1989 (PNL-7346, May 1990) to P. Koberstein, *Oregonian* newspaper. Provided general HEDR Project information to C. Tate, North Powder, Oregon, and to K. Hilbun, Kennewick, Washington.
- communicated with W. Caan of Hancock, Rothard and Bunchoff and coordinated request for HEDR Project materials through the RL Public Reading Room

Major Problem Areas or Changes and Action Taken

None.

Variance

No significant cumulative variance.

Planned Work for the Next Three Months

- complete media analysis (Milestone 1203C) by July 1992
- attend TSP public meeting and TSP Communications Subcommittee meeting in July ☐

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)

FY 1992 to Date (October 1991 - September 1992)												
June 1992		CDC (d)										
Labor \$	Non-Labor \$ (a)	Total \$	Labor \$	Non-Labor \$ (a)	Total \$	Cum(b) Planned Variance	TSP (c) Approved FY Budget	CDC (e) Contract FY Budget Remaining	Funds FY Labor Hours	Budgeted FY Labor Hours		
HEDR Project Tasks												
Task 01 - Project Management (f)												
0101 Project Planning & Control	32	5	37	438	117	555	532	-23	727	-49	123	7,285
0102 Final Phase I Reports	0	0	0	11	5	16	12	-4	12	1	-3	250
0103 Project Administration	26	0	26	205	27	232	290	58	413	-39	142	5,742
0104 Project Peer Review	1	0	1	32	1	33	24	-9	42	-1	8	372
Subtotal Task 01	59	5	64	686	150	836	858	22	1,194	-88	270	13,649
Task 02 - Technical Integration												
0201 Tech Planning/Control/Rep	7	0	7	46	1	47	51	4	71	-2	22	670
0204 Proj Tech Cord /Analysis	18	0	18	73	3	76	65	-11	77	30	31	941
0205 Path & Dose Model Require	12	0	12	46	3	49	83	34	129	-26	54	1,335
Subtotal Task 02	37	0	37	165	7	172	199	27	277	2	107	2,946
Task 03 - Source Terms												
0301 Tech Planning/Control/Rep	5	0	5	25	5	30	38	8	46	0	16	403
0302 Closure of Ph I Iodine Rel	0	0	0	20	1	21	5	-16	5	0	-16	54
0304 Rad Releases to Water	5	0	5	25	0	25	82	57	98	1	74	870
0305 Source Term Release Model	0	0	0	6	10	16	5	-11	5	0	-11	54
0307 Rad Release Data Avail/Rev	10	0	10	133	8	141	135	-6	180	-3	36	2,154
Subtotal Task 03	20	0	20	209	24	233	265	32	334	-2	92	3,535

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

June 1992		FY 1992 to Date (October 1991 - September 1992)									
Labor \$	Non-Labor \$ (a)	Total \$	Labor \$	Non-Labor \$ (a)	Total \$	Cum Planned	Cum Variance	TSP (c) Approved FY Budget	CDC (d) Negotiated Budget Adjustments	CDC (e) Contract FY Budget Remaining	Budgeted FY Labor Hours
Task 04 - Environmental Transport											
0401 Tech Planning/Control/Rep	0	0	1	0	1	0	-1	0	0	0	0
0402 Atmospheric Model Develop	13	13	142	6	148	151	3	214	-1	213	-1
0403 Groundwater Transport	0	1	52	10	62	62	0	61	1	62	65
0404 Surface-Water Transport	6	7	75	4	79	82	-1	132	-2	130	0
0405 Atmospheric Model Databas	7	7	90	3	93	57	-35	71	0	71	51
0406 Atmospheric Model Calculat	0	0	0	0	0	7	3	31	-1	30	-22
Subtotal Task 04	26	28	360	23	383	359	-31	509	-3	506	30
											355
											5,615
Task 05 - Environmental Monitoring Data											
0501 Tech Planning/Control/Rep	7	7	32	2	34	28	-6	38	0	38	4
0502 Terrestrial Monitoring Data	10	14	49	1	50	56	6	67	-1	66	16
0503 Environmental Monitoring Dai	3	8	16	18	34	21	-13	46	-10	36	2
0504 Surface-Water Monitoring	0	0	16	-1	15	15	0	15	0	15	0
Subtotal Task 05	20	29	113	20	133	120	-13	166	-11	155	22
											1,683
Task 06 - Demography, Food Consumption & Agriculture											
0601 Tech Planning/Control/Rep	0	0	29	1	30	29	-1	41	0	41	11
0602 Food Consumption	3	3	38	6	44	57	13	60	0	60	16
0603 Milk/Other Food Model Dev	24	25	91	4	95	169	74	337	-107	230	135
0605 Native American Data	1	23	15	58	73	64	-9	137	-57	80	7
Subtotal Task 06	28	51	173	69	242	209	77	575	-164	411	169
											2,588

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

FY 1992 to Date (October 1991 - September 1992)										CDC (d)			CDC (e)		Budgeted	
June 1992		Non-					Cum(b)		TSP (c)		Negotiated		Funds		Hours	
Labor \$	Labor \$ (a)	Total \$	Labor \$	Non-Labor \$ (a)	Total \$	Planned	Variance	Approved FY Budget	Budget Adjustments	FY Budget	Remaining	FY Labor	Hours			
Task 07 - Environmental Pathways & Dose Estimates																
0701 Tech Planning/Control/Rep	5	0	5	34	39	43	9	62	-1	61	27	618				
0702 Path & Dose Code Dev/Doc	38	1	39	218	236	167	-69	240	1	241	5	2,745				
0703 Path & Dose Model Paramet	3	0	3	72	73	59	-14	75	-2	73	0	798				
0705 Dose Calculations	0	0	0	0	0	8	8	39	-16	23	23	247				
Subtotal Task 07	46	1	47	324	343	277	-66	416	-18	398	55	4,408				
Task 08 - Statistics																
0801 Tech Planning/Control/Rep	1	0	1	23	25	35	10	49	-1	48	23	388				
0802 Stats Support for Tech Work	11	1	12	67	66	104	38	140	-2	138	72	1,234				
0803 Analysis of Model Reliability	27	0	27	112	111	127	16	205	-1	204	93	1,932				
Subtotal Task 08	39	1	40	202	202	266	64	394	-4	390	188	3,554				
Task 09 - Records Management																
0901 Tech Planning/Control/Rep	1	0	1	13	14	13	0	15	0	15	2	245				
0902 Project Records Management	3	0	3	17	19	46	27	71	-1	70	51	1,667				
Subtotal for Task 09	4	0	4	30	32	59	27	86	-1	85	53	1,912				
Task 10 - Quality Assurance																
1001 Tech Planning/Control/Rep	0	0	0	12	15	10	-5	13	0	13	-2	146				
1002 QA Program Development	0	0	0	9	9	13	4	17	1	18	9	245				
1003 QA Verification	2	0	2	5	5	19	14	28	1	29	24	355				
Subtotal Task 10	2	0	2	26	29	42	13	58	2	60	31	746				

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

	FY 1992 to Date (October 1991 - September 1992)									
	June 1992					CDC (d)				
	Labor \$	Non-Labor \$(a)	Total \$	Labor \$	Non-Labor \$(a)	Total \$	Cum Planned	TSP (c) Approved FY Budget	CDC (e) Contract FY Budget	Budgeted FY Labor Hours
Task 11 - Information Resources										
1101 Tech Planning/Control/Rep	2	0	2	32	-1	31	34	44	43	12
1102 Hanford Document Declass	2	0	2	39	0	39	43	51	52	13
1103 Hanford Info Resources Iden	4	0	4	49	3	52	56	63	69	17
Subtotal Task 11	8	0	8	120	2	122	133	158	164	42
Task 12 - TSP Communications Support										
1201 Tech Planning/Control/Rep	2	0	2	19	2	21	13	17	17	4
1202 TSP Public Outreach Support	0	0	0	1	3	4	8	20	8	4
1203 Comm Assessment Research	-2	0	-2	4	0	4	9	12	12	8
1204 TSP Meeting/Material Sup	2	0	2	7	11	18	25	30	31	13
Subtotal - Task 12	2	0	2	31	16	47	55	79	68	21
Subtotal, HEDR Project Tasks	291	41	332	2,439	335	2,774	2,952	4,246	3,954	1,180
										44,644

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

	June 1992			FY 1992 to Date (October 1991 - September 1992)										Budgeted FY Labor Hours
	Labor \$	Non-		Labor \$	Labor \$(a)	Total \$	Cum(b) Planned	Cum Variance	TSP (c) Approved FY Budget	CDC (d)		CDC (e) Contract FY Budget	Funds Remaining	
		Labor \$ (a)	Total \$							Negotiated Budget Adjustments				
Technical Steering Panel (a)	0	22	22	0	365	365	700	335	1,003 (h)	-85 (i)	918	553	0	
Native American Research	0	0	0	0	2	2	250	241	356 (h)	0	356	347	0	
TOTAL	291	64	355	2,432	702	3,148	3,902	747	5,695	-377	5,228	2,080	44,644	

(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 FY 1991 carryover funds as approved in a letter from D. B. Shipley to J. E. Till, dated 11-19-91.

(d) Adjustments made to the TSP-approved budget, as negotiated by CDC for the contract with Battelle. This includes budget and scope reductions due to funding shortfall.

(e) "CDC Contract FY Budget" is the scope and budget CDC negotiated with Battelle. This includes a reduction to the FY 1992 budget and scope of \$275K.

(f) This is a reconciliation of DOE funds available and the TSP approved budget.

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

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

(i) FY budget provides funding through September 30, 1992. See Figures A.2 and A.3 for additional information.

The FY budget includes FY 1991 carryover and PNL overheads applied to subcontracts.

(i) PNL costs and commitments incurred prior to June (CDC Contract) - To be negotiated between CDC and the TSP.

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 in the HEDR Project -
Placed in the RL Public Reading Room
During June 1992**

Appendix B

Hanford Site-Originated Documents of Potential Interest/Use in the HEDR Project - Placed in the RL Public Reading Room During June 1992

BNWL-CC-0224	An Evaluation of Hanford Water Treatment Practices. 37p.	09/01/65
BNWL-CC-0224-ADD	An Evaluation of Hanford Water Treatment Practices Addendum. 9p.	05/01/65
HAN-71254-DEL	Monthly Status and Progress Report for January 1959. 24p.	02/12/59
HAN-71477-DEL	Monthly Status and Progress Report for February 1959. 20p.	03/12/59
HAN-71736-DEL	Monthly Status and Progress Report for March 1959. 15p.	04/13/59
HAN-71970-DEL	Monthly Status and Progress Report for April 1959. 17p.	05/13/59
HAN-72358-DEL	Monthly Status and Progress Report for May 1959. 21p.	06/12/59
HAN-72665-DEL	Monthly Status and Progress Report for June 1959. 16p.	07/14/59
HAN-72984-DEL	Monthly Status and Progress Report for July 1959. 17p.	08/13/59
HAN-73270	Monthly Status and Progress Report for August 1959. 17p.	09/14/59
HAN-73575	Monthly Status and Progress Report for September 1959. 17p.	10/13/59
HAN-73854	Monthly Status and Progress Report for October 1959. 20p.	11/13/59
HAN-74058	Monthly Status and Progress Report for November 1959. 16p.	12/11/59
HAN-74331	Monthly Status and Progress Report for December 1959. 18p.	01/14/60
HAN-74585-DEL	Monthly Status and Progress Report for January 1960. 18p.	02/11/60
HAN-74881-DEL	Monthly Status and Progress Report for February 1960. 19p.	03/11/60
HAN-75122-DEL	Monthly Status and Progress Report for March 1960. 19p.	04/13/60
HAN-75414-DEL	Monthly Status and Progress Report for April 1960. 17p.	05/12/60
HAN-75685-DEL	Monthly Status and Progress Report for May 1960. 17p.	06/13/60
HAN-75945-DEL	Monthly Status and Progress Report for June 1960. 19p.	07/14/60
HAN-76200-DEL	Monthly Status and Progress Report for July 1960. 12p.	08/11/60
HAN-76476-DEL	Monthly Status and Progress Report for August 1960. 21p.	09/14/60
HAN-76688-DEL	Monthly Status and Progress Report for September 1960. 17p.	10/14/60

HAN-76922	Monthly Status and Progress Report for October 1960. 18p.	11/14/60
HAN-77180	Monthly Status and Progress Report for November 1960. 20p.	12/13/60
HAN-77440-DEL	Monthly Status and Progress Report for December 1960. 17p.	01/13/60
HW-3-2710	Unit Purging. 4p.	06/25/45
HW-7405	H.I. Report on the 200 Areas and Associated Laboratories for the Week ending August 27, 1947. 5p.	08/28/47
HW-9372	Meteorological Consultation March 19, 1948. 2p.	04/01/48
HW-9476	Meteorological Information. 3p.	05/22/56
HW-32624-DEL	Monthly Report Hanford Atomic Operation July 1954. 357p.	08/20/54
HW-32639	Status of Fuel Element Development at Hanford for April and May, 1954. 51p.	07/01/54
HW-32889-DEL	Monthly Report Hanford Atomic Products Operation September 1954. 359p.	09/17/54
HW-34147-DEL	Monthly Report Hanford Atomic Products Operation December 1954. 364p.	01/25/55
HW-34631-DEL	Monthly Report Hanford Atomic Products Operation January 1955. 362p.	02/21/55
HW-35891-DEL	Monthly Report Hanford Atomic Products Operation March 1955. 379p.	04/20/55
HW-38828-DEL	Monthly Report Hanford Atomic Products Operation August 1955. 386p.	09/27/55
HW-39691	Water Treatment History at Hanford Reactors. 5p.	10/31/55
HW-40182-DEL	Monthly Report Hanford Atomic Products Operation November 1955. 390p.	12/30/55
HW-42626-DEL	Monthly Report Hanford Atomic Products Operation April 1956. 396p.	05/21/56
HW-45115-DEL	Monthly Report Hanford Atomic Products Operation August 1956. 359p.	09/28/56
HW-45707-DEL	Chemical Processing Department Monthly Report September 1956. 101p.	10/18/56
HW-45717-DEL	IPD Monthly Record Report September 1956. 165p.	10/23/56
HW-46066-DEL	Hanford Labs Operation Monthly Activities Report September 1956. 59p.	10/19/56
HW-46349-DEL	IPD Monthly Record Report October 1956. 159p.	11/21/56

HW-46432-DEL	Chemical Processing Department Monthly Report October 1956. 105p.	11/21/56
HW-46727-DEL	Hanford Labs Operation Monthly Activities Report October 1956. 86p.	11/21/56
HW-47021-DEL	IPD Monthly Record Report November 1956. 152p.	12/20/56
HW-47056-DEL	Chemical Processing Department Monthly Report November 1956. 99p.	12/21/56
HW-47291	Hanford Labs Operation Monthly Activities Report November 1956. 89p.	12/21/56
HW-47615-DEL	IPS Monthly Record Report December 1956. 157p.	01/19/57
HW-47675-DEL	Chemical Processing Department Monthly Report December 1956. 98p.	01/21/57
HW-47858-DEL	Hanford Labs Operation Monthly Activities Report December 1956. 86p.	01/22/57
HW-47943-DEL	Hanford Labs Operation Monthly Activities Report January 1957. 120p.	02/15/57
HW-48046-DEL	IPD Monthly Record Report January 1957. 167p.	02/20/57
HW-54291-DEL	IPD Monthly Record Report December 1957. 147p.	01/21/58
HW-56184-DEL	IPD Monthly Record Report May 1958. 152p.	06/20/58
HW-56185	Hanford Labs Operation Monthly Activities Report May 1958. 134p.	06/15/58
HW-56218-DEL	Chemical Processing Department Monthly Report May 1958. 81p.	06/20/58
HW-56399	Composition of PUREX Dissolver Off-Gas. 7p.	06/09/58
HW-56527-DEL	IPD Monthly Record Report June 1958. 154p.	07/21/58
HW-56602-DEL	Chemical Processing Department Monthly Report June 1958. 80p.	07/22/58
HW-56640	Hanford Labs Operation Monthly Activities Report June 1958. 142p.	07/15/58
HW-56911-DEL	IPD Monthly Record Report July 1958. 149p.	08/21/58
HW-56914	Hanford Labs Operation Monthly Activities Report July 1958. 133p.	08/15/58
HW-56972-DEL	Chemical Processing Department Monthly Report July 1958. 79p.	08/22/58

HW-57225	Hanford Labs Operation Monthly Activities Report August 1958. 139p.	09/15/58
HW-57278-DEL	IPD Monthly Record Report August 1958. 148p.	09/19/58
HW-57328-DEL	Chemical Processing Department Monthly Report August 1958. 84p.	09/22/58
HW-57597-DEL	IPD Monthly Record Report September 1958. 142p.	10/21/58
HW-57636	Hanford Labs Operation Monthly Activities Report September 1958. 139p.	10/15/58
HW-57640-DEL	Chemical Processing Department Monthly Report September 1958. 80p.	10/22/58
HW-57840-DEL	IPD Monthly Record Report October 1958. 145p.	11/21/58
HW-58019	Hanford Labs Operation Monthly Activities Report October 1958. 150p.	11/15/58
HW-580151-DEL	Chemical Processing Department Monthly Report October 1958. 76p.	11/21/58
HW-58153	Through-Reactor Decontamination, A Technical Status Report. 10p.	11/12/58
HW-58244	Hanford Labs Operation Monthly Report November 1958. 144p.	12/15/58
HW-58305-DEL	Chemical Processing Department Monthly Report November 1958. 76p.	12/22/58
HW-58360	IPD Monthly Record Report November 1958. 147p.	12/19/58
HW-63740	Hanford Labs Operation Monthly Report January 1960. 157p.	02/15/60
HW-67800	Process Summary of PUREX Plant Operation January 1961 Through December 1961. 238p.	12/30/60
HW-74176	Progress in Reactor Water Plant Operation FY-1958 Through FY-1962. 9p.	07/30/62
HW-76557	Status Report: Production Reactor Process Tube Film Composition and Radionuclide Inventory Studies. 6p.	02/12/63
HW-78039	Chemical Decontamination of Hanford Production. Reactors. 13p.	06/27/63
HWN-1991	CPD Waste Storage and Experience. 152p. (Previously Declassified with Deletions.)	07/26/57
PNL-2689	Hanford Production Reactor Heat Releases 1951-1971. 50p.	04/01/92
RHO-RE-SR-45	RDATA/PDATA-Source (6 Microfiche Sheets). 1344p.	05/20/85

RHO-RE-SR-46

RDATA/PDATA-Source (5 Microfiche Sheets). 1008p.

05/20/85

RHO-RE-SR-47

Fuel Irradiation Separation and Shipment Data
(3 Microfiche Sheets). 664p.

05/21/85

Appendix C
HEDR Documents to the TSP - June 1992

Appendix C

HEDR Documents to the TSP - June 1992

Title	Author	Date Issued	Publication No	Additional Information	Status
Milk Production and Distribution in Low-Dose Counties for the Hanford Thyroid Disease Study	JG Schimmel DM Beck	6/92	PNL-8153 HEDR	Milestone 0603B	To TSP/CDC for comment

Appendix D

HEDR Presentation Handouts to the TSP - June 1992

Note: No presentation handouts were generated in June.

Appendix E

HEDR Open-Literature Publications and Presentations - June 1992

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.

Note: No publications in June.

Appendix F
Communications Log - June 1992

Appendix F
Communications Log - June 1992

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
B Aripa/Colville Tribes	TA Ikenberry/BNW	Phone	Contract proposal
WA Bishop/TSP	TA Ikenberry/BNW	Phone	Native American contracting
WA Bishop/TSP	EB Liebow/BNW	Phone	Budget status update, status of tribes' statements of work
WA Bishop/TSP	EB Liebow/BNW	Phone	New Yakima environmental program head
WA Bishop/TSP	EB Liebow/BNW	Phone	Draft "work requirements" section
ML Blazek/TSP	GL Harvey/BNW	Phone	Send reports to P Koberstein
ML Blazek/TSP	DB Shipler/BNW	Phone	Need for costs incurred
RF Brich/RL	DB Shipler/BNW	Phone	HEDR funding needs, letter to Assistant Secretary for Environment, Safety, and Health, DOE
GG Caldwell/TSP	GL Harvey/BNW	Phone	Request report
K CharLee/TSP Staff	SM Finch/BNW	Phone	Request documents and new address
K CharLee/TSP Staff	JM Daer/BNW	Phone	Travel arrangements
K CharLee/Donna/TSP Staff	JM Daer/BNW	Phone	Received Phase I booklets
JM Daer/BNW	DS Barth/TSP	Phone	New fax numbers for staff listing
JM Daer/BNW	K CharLee/TSP Staff	Phone	Ordered 50 Phase I booklets
MR Donnelly/CDC	EB Liebow/BNW	Phone	Status of CDC request for proposal (RFP) development
MR Donnelly/CDC	EB Liebow/BNW	Fax	"Work requirements" section of proposed RFP
MR Donnelly/CDC	DB Shipler/BNW	Phone	Meeting with DOE and Battelle
SM Finch/BNW	CW Miller/CDC	Phone	Reviewers' addresses
SM Finch/BNW	K CharLee/TSP Staff	Phone	Advertising sensitivity/uncertainty meeting

Communications Log - June 1992

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
SM Finch/BNW	PC Klingeman, JE Till/ TSP	Phone	Workshop agreement (Astoria)
SM Finch/BNW	MA Robkin/TSP	Phone	Property pass
SM Finch/BNW	V Pierre/Kalispell Tribe, D Ernst/Spokane Tribe	Phone	Cancel Native American Working Group (NAWG) meeting
MD Freshly/BNW	B Shleien/TSP	Phone	Changes to groundwater report
NJ Germond/TSP	SM Finch/BNW	Phone	Invoice address
SP Gydesen/BNW	K CharLee/TSP Staff	Phone	Documents on active particle problems
HA Harris/DOE	DB Shipler/BNW	Phone	Funding status and actions by DOE, FY 1993 funding limits--TSP and Native American subcontracts
GL Harvey/BNW	K Niles/TSP Staff	Fax, Phone	Declassification fact sheet, FY 1991 TSP video
B Howden/AECB	BA Napier/BNW	Phone, Fax	Preparing "Hanford Primer" for Canadian Parliament, questions on 1951 iodine-131 releases
TA Ikenberry/BNW	WA Bishop/TSP	Phone	Native American training session
TA Ikenberry/BNW	W Hanson/Yakima Indian Nation	Phone	Work Order #3 scope of work
EB Liebow/BNW	B Amundson/ Fred Hutchinson Cancer Research Center, P Houck/IHS	Phone	Status of work orders, CDC RFP development
EB Liebow/BNW	B Aripa/Colville Tribes, V. Pierre/Kalispell Tribe, W Hanson/Consultant to Yakima Indian Nation	Phone	Status of current work and proposed work order
W LeFurgy/DOE-HQ	SP Gydesen/BNW	Phone	1961-1972 document listing
AH McMakin/BNW	LE Sewell/CDC	Phone	HEDR reports - CDC approval process
K Niles/TSP Staff	GL Harvey/BNW	Phone	Comments on TSP declassification fact sheet

Communications Log - June 1992

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
MS Power/TSP Staff	EB Liebow/BNW	Phone	River pathways discussion at July TSP meeting
P Renard/CDC	EB Liebow/BNW	Fax	"Work requirements" section
MA Robkin/TSP	SP Gydesen/BNW	Phone	Documents to be reviewed, diskette problem
GS Roessler/TSP	SM Finch/BNW	Phone	Budget information and HEDR documents
LE Sewell/CDC	DB Shipler/BNW	Phone	Addressee and cc for letters; DOE scope/funding shortfall; status of funding, costs and commitments; detailed review of faxed information; set up meeting in Atlanta to close on contract
DB Shipler/BNW	MJ Sage/CDC	Phone	CDC actions for HEDR funding
DB Shipler/BNW	LE Sewell/CDC	Phone	HEDR funding limits, OMB process, agricultural survey, TSP and Native American budgets
DB Shipler/BNW	RF Brich/RL	Phone	Funding actions, signed CDC contract, extension of Native American subcontracts
DB Shipler/BNW	MS Power/TSP Staff	Phone	Alert on funding actions
DB Shipler/BNW	JE Till/TSP	Phone	Funding problem should not stop Battelle action, invite to teleconference, notification of signed CDC contract
DB Shipler/BNW	ML Blazek/TSP	Phone	Reversal of Battelle actions--need for contract status
DB Shipler/BNW	CW Miller/CDC MJ Sage/CDC	Phone	Status of funding and costs to close on contract
DB Shipler/BNW	B Smith/CDC	Phone	Details of 6/16/92 meeting, OMB review of agricultural survey
DB Shipler/BNW	R Goldsmith	Phone	Review of funding actions and responses

Communications Log - June 1992

Initiated By/ Affiliation	Contact/ Affiliation	Type	Subject
DB Shipler/BNW	B Shleien/TSP	Phone	CDC contract signed, unfunded work to be included, lack of DOE funds for BNW costs incurred in May
DB Shipler/BNW	L Machta/NOAA, D Randerson/NOAA	Phone	RATCHET code review, documents and disks needed
B Shleien/TSP	SM Finch/BNW	Phone	TSP member budgets
B Shleien/TSP	SP Gydesen/BNW	Phone	Hanford historical card catalog
B Shleien/TSP	DB Shipler/BNW	Phone	Decision level points and scoping calculations, concerns over Battelle action, need for costs incurred
B. Shleien/TSP	BA Napier/BNW	Phone	Dose decision levels and application to air and river pathways
M Strong/BNW	J Gate/BP Staff, ML Blazek/TSP, WA Bishop/TSP, K CharLee/TSP Staff	Phone	HEDR sensitivity/uncertainty plan review
J Thomas/HEAL	SP Gydesen/BNW	Phone	Issue books for HAN documents, historical diaries, policy decision documents, classified documents, krypton release codes
JE Till/TSP	SM Finch/BNW, JM Dacr/BNW	Phone	Air model peer review package
JE Till/TSP	DB Shipler/BNW	Phone	Status of funding actions, status of OMB process, review of CDC meeting, package of information for air model review
JR Wilkinson/ Confederated Tribes of the Umatilla Indian Reservation	TA Ikenberry/BNW	Phone, Fax	Umatilla food consumption data

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