WHC-SP-0903
Revision 2
UC-630

NEPA Source Guide for the Hanford Site

NEPA Services
Westinghouse Hanford Company

Date Published
September 1995

Prepared for the U.S. Department of Energy
Assistant Secretary for Environment, Safety and Health

Westinghouse Hanford Company
P.O Box 1970
Richland, Washington

Hanford Operations and Engineering Contractor for the
U.S. Department of Energy under Contract DE-AC06-87RL10930

Approved for Public Release

Available to the U.S. Department of Energy
and its contractors from
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831
(615) 576-8401

Available to the public from the U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650

Printed in the United States of America

DISCLM-1.CHP (1-91)

RELEASE AUTHORIZATION

Document Number:	WHC-SP-0903, Rev. 2
Document Title:	NEPA Source Guide for the Hanford Site
Release Date:	September 27, 1995

This document was reviewed following the procedures described in WHC-CM-3-4 and is:

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

T.L. Ontiveros — September 27, 1995

Document Title: National Environmental Policy Act
Source Guide for the Hanford Site
WHC-SP-0903, Revision 2

Prepared by: S. R. Tifft
WHC NEPA Services
9-28-95
Date

Reviewed by: R. H. Engelmann, Manager
WHC NEPA Services
9-28-95
Date

Approved by: D. A. Moore, Manager
Hanford Environmental Management Program
9-28-95
Date

This page intentionally left blank.

ACKNOWLEDGMENT

The *National Environmental Policy Act Source Guide for the Hanford Site* was produced through the cooperative efforts of Westinghouse Hanford Company and Pacific Northwest Laboratory NEPA staff. This co-authorship has not only saved individual contractor staff time, which represents a cost savings to the U.S. Department of Energy, but has also resulted in a complete and more consistent document for use at the Hanford Site. Those responsible for this document's publication wish to thank all individuals who helped in its preparation.

This page intentionally left blank.

TABLE of CONTENTS

* New documents added to Rev. 2

* New documents added to Rev. 2

* New documents added to Rev. 2

* New documents added to Rev. 2

This page intentionally left blank.

LIST OF TERMS

AEC	U.S. Atomic Energy Commission
ALARA	as low as reasonably achievable
BWIP	Basalt Waste Isolation Project
CEQ	Council on Environmental Quality
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy, Headquarters
DOT	U.S. Department of Transportation
DST	double-shell tank
EA	Environmental Assessment
Ecology	Washington State Department of Ecology
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMSL	Environmental and Molecular Sciences Laboratory
ERDA	U.S. Energy Research and Development Administration
FFTF	Fast Flux Test Facility
FMEF	Fuels and Materials Examination Facility
FONSI	Finding Of No Significant Impact
FY	fiscal year
FR	*Federal Register*
HEPA	high-efficiency particulate air (filter)
HFNS	High-Flux Neutron Source (Facility)
HLW	high-level waste
HPFL	High-Performance Fuel Laboratory
HWVP	Hanford Waste Vitrification Plant
LFL	lower flammability limit
LLW	low-level waste
LMFBR	liquid metal fast breeder reactor
MASF	Maintenance and Storage Facility
mrem	millirem
MWt	megawatt thermal
NEPA	*National Environmental Policy Act of 1969*
NRC	U.S. Nuclear Regulatory Commission
NSTF	Near-Surface Test Facility
NWPA	Nuclear Waste Policy Act of 1982
PFM	Process Facility Modification
PFP	Plutonium Finishing Plant
PNL	Pacific Northwest Laboratory
PUREX	Plutonium-Uranium Extraction (Facility)
R&D	research and development
RCRA	*Resource Conservation and Recovery Act of 1976*

rem	roentgen equivalent man
RMW	radioactive mixed waste
ROD	Record of Decision
SST	single-shell tank
TCT	thermocouple tree
TEDF	Treated Effluent Disposal Facility
TRU	transuranic (waste)
UO_3	Uranium-Trioxide (Plant)
USQ	unreviewed safety question
WASH	Washington, D.C. (AEC)
WHC	Westinghouse Hanford Company
WIPP	Waste Isolation Pilot Plant

1.0 USER'S GUIDE

1.1 Purpose

This Source Guide will assist those working with the *National Environmental Policy Act of 1969* (NEPA) to become more familiar with the Environmental Assessments (EA) and Environmental Impact Statements (EIS) that apply to specific activities and facilities at the Hanford Site. This document should help answer questions concerning NEPA coverage, history, processes, and the status of many of the buildings and units on and related to the Hanford Site.

This document summarizes relevant EAs and EISs by briefly outlining the proposed action of each and the decision made by the U.S. Department of Energy (DOE) or its predecessor agencies, the U.S. Atomic Energy Commission (AEC), and the U.S. Energy Research and Development Administration (ERDA), concerning the proposed action and current status of the buildings and units discussed in the proposed action. If a decision was officially stated by the DOE, as in a Finding Of No Significant Impact (FONSI) or a Record of Decision (ROD), and was located, a summary is provided in the text. Not all federal decisions, such as FONSIs and RODs, can be found in the *Federal Register* (FR). For example, although significant large-action FONSIs can be found in the FR, some low-interest FONSIs may have been published elsewhere (i.e., local newspapers).

The EA and EIS summaries are arranged in numerical order. To assist in locating a particular EA or EIS, the upper right corner of each page lists the number of the summary or summaries discussed on that page. Any draft EA or EIS is followed by a "D." The EAs with nonstandard numbering schemes are located in Chapter 3.

1.2 Personal Computer Access to Information

An electronic copy of the NEPA Source Guide is available in WordPerfect[1] format. Appendix A is not included in that copy. This WordPerfect file can be obtained by contacting the Westinghouse Hanford Company's (WHC) NEPA Services Organization. The WordPerfect file can be copied onto a user's hard drive for easy computer access.

1.3 Libraries

The Hanford Technical Library, located in the 300 Area of the Hanford Site, has Hanford Site EISs on file in the documents room. The WHC and the Pacific Northwest Laboratory (PNL) maintain libraries of all NEPA documentation found in this guide. The WHC's NEPA Services Organization or the PNL's NEPA Compliance Staff can assist in locating specific documents or maintained files of lower-tiered NEPA documents such as Categorical Exclusions and Memorandum to Files.

---

[1]WordPerfect is a trademark of WordPerfect Corporation.

1.4 History of National Environmental Policy Act Documentation at the Hanford Site

The AEC was the first agency to prepare EISs and EAs at the Hanford Site. Originally, the EISs were called Environmental Statements and EAs were known as Environmental Impact Assessments (EIA). When the AEC was reorganized and replaced by the ERDA, the EISs and EAs became ERDA documents. Similarly, when the ERDA became part of the DOE, the EISs and EAs became DOE documents. Before 1978, the EA and EIS process did not culminate in FONSIs or RODs. In 1978, the Council on Environmental Quality (CEQ) published NEPA regulations requiring FONSIs and RODs for these documents. The DOE formally adopted these regulations in July 1979.

A comprehensive list of all the EISs and EAs published as AEC, ERDA, and DOE documents is available from the DOE Office of NEPA Oversight in Washington, D.C., phone (202) 896-0125. A complete listing for each document includes the DOE number, title, relevant dates, DOE facility, states, and comments.

The documents identified as draft have not been finalized or were canceled. Draft documents do not have an official status; therefore, they can only be referenced as predecisional.

1.5 Nuclear Waste Policy Act of 1982

The *Nuclear Waste Policy Act of 1982* (NWPA) specifies the process for selecting a repository site and gives this responsibility to the DOE. Congress approved geologic disposal by declaring that one of the key purposes of the act is "to establish a schedule for the citing, construction, and operation of repositories that will provide reasonable assurance that the public and the environment will be adequately protected from the hazards posed by high-level waste (HLW) and other such spent nuclear fuel as may be disposed of in a repository." All documents associated with the NWPA and the Hanford Site can be found in Chapter 3. Some specific NWPA activities are exempt from the requirements for the NEPA.

2.0 ENVIRONMENTAL ASSESSMENTS - HANFORD SITE

2.1 Numerical Listing of Hanford Site EAs

DOE/EA-0021 *Decommissioning and Decontamination Activity, Hanford Building Disposal Demonstration Project, REDOX Plutonium Concentration (233-S) Building, Hanford Reservation, Richland, Benton County, Washington*, March 1978.

A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

****

DOE/EA-0030D *Operation of N Reactor and Fuels Fabrication Facilities, Hanford Reservation, Richland, Washington*, July 1978, draft.

The EA was never finalized.

****

DOE/EA-0044 *Support Services Building, Hanford Reservation, Richland, Washington*, July 1978.

A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

****

DOE/EA-0048 *National Waste Terminal Storage Program, Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, June 1978.

A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

****

DOE/EA-0052 *National Waste Terminal Storage Program, Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, December 1978.

A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

****

DOE/EA-0102 *Steam Generator Tube Integrity Program, Surry Steam Generator Project, Hanford Site, Richland, Washington*, March 1980.

The FONSI was approved March 27, 1980, and was published in the FR April 2, 1980 (45 FR 21676).

****

DOE/EA-0111 *Maintenance and Storage Facility, Hanford Site, Richland, Washington*, May 1980.

A FONSI is not available; this EA was completed before the CEQ's final regulations were issued.

****

DOE/EA-0116 *Fuels and Materials Examination Facility, Hanford Site, Richland, Washington*, July 1980.

The FONSI was approved July 14, 1980.

****

DOE/EA-0120 *F Area Decommissioning Program, Hanford Site, Richland, Washington*, October 1980.

The FONSI was published in the FR August 22, 1980 (45 FR 56125).

****

DOE/EA-0188 *Basalt Waste Isolation Project, Exploratory Shaft Construction, Hanford Site, Richland, Benton County, Washington*, September 1982.

The FONSI was published in the FR September 16, 1982 (47 FR 40820).

****

DOE/EA-0258D *Breeder Reprocessing Engineering Test (BRET) Facility, Hanford Site, Richland, Washington*, draft.

The EA was never finalized.

****

DOE/EA-0259 *Decommissioning of Strontium Semiworks Facility, Hanford Site, Richland, Washington*, May 1985.

The FONSI was approved May 15, 1985.

****

DOE/EA-0312 *Grouting and Near-Surface Disposal of Low-Level Radioactive Phosphate/Sulfate Wastes from N Reactor Operation, Hanford Site, Richland, Washington*, December 1986.

The FONSI was approved November 21, 1986.

****

DOE/EA-0318 *SP-100 Ground Engineering System Test Site, Hanford Site, Richland, Washington*, December 1988.

The FONSI was approved in the FR December 15, 1988 (53 FR 50444). The FONSI was reissued September 27, 1989, and included public comments (54 FR 39564).

****

DOE/EA-0358D *Handling and Transportation of Isotopic Heat Sources Prepared at the Hanford Site, Richland, Washington*, draft.

The EA is at the U.S. Department of Energy, Headquarters (HQ) and is currently pending an identification of a delivery date from Germany for approval.

****

DOE/EA-0370D *Fast Flux Test Facility Power Addition, Hanford Site, Richland, Washington*, draft.

The EA was abandoned when the future of the Fast Flux Test Facility (FFTF) was in question.

****

DOE/EA-0383 *Hanford Environmental Compliance Project, Hanford Site, Richland, Washington*, November 1991.

The FONSI was approved March 11, 1992.

****

DOE/EA-0411D *Fuel Assembly Area, Hanford Site, Richland, Washington*, draft.

The EA was abandoned when the future of the FFTF was in question.

****

DOE/EA-0429 *Environmental and Molecular Sciences Laboratory at the Hanford Site, Richland, Washington*, May 1990.

The FONSI was approved September 17, 1992.

****

DOE/EA-0479 *Collecting Crust Samples from Level Detectors in Tank 101-SY at the Hanford Site, Richland, Washington*, November 1990.

The FONSI was approved November 16, 1990.

****

DOE/EA-0495 *Preparation for Crust Sampling of Tank 241-SY-101, Hanford Site, Richland, Washington*, February 1991.

The FONSI was approved February 15, 1991.

****

DOE/EA-0511 *Characterization of Tank 241-SY-101, Hanford Site, Richland, Washington*, May 1991.

The FONSI was approved May 10, 1991.

****

DOE/EA-0533 *Vapor Space Sampling of Ferrocyanide Tanks, Hanford Site, Richland, Washington*, July 1991.

The FONSI was approved August 2, 1991.

****

DOE/EA-0535 *105-KE and 105-KW Basins Fuel Encapsulation and Repackaging, 100-K Area, Hanford Site, Richland, Washington*, June 1992.

The FONSI was approved June 23, 1992.

****

DOE/EA-0538 *Storage of Fast Flux Test Facility Unirradiated Fuel in the Plutonium Finishing Plant Complex, Hanford Site, Richland, Washington*, January 1992.

The FONSI was approved January 9, 1992.

****

DOE/EA-0581 *Upgrading of the Ventilation System at the 241-SY Tank Farm, Hanford Site, Richland, Washington*, December 1991.

The FONSI was approved December 20, 1991.

****

DOE/EA-0582 *Expedited Response Action for the 200 West Area Carbon Tetrachloride Plume at the Hanford Site, Richland, Washington*, February 1992. (This document is also known as an Engineering Evaluation/Cost Analysis - Environmental Assessment, DOE/RL-91-32)

The FONSI was approved February 20, 1992.

****

DOE/EA-0596 *Intrusive Sampling and Testing of Ferrocyanide Tanks, Hanford Site, Richland, Washington*, January 1992.

The FONSI was approved February 11, 1992.

****

DOE/EA-0618 *Integrated Voice/Data Telecommunications System, Hanford Site, Richland, Washington*, April 1992.

The FONSI was approved April 21, 1992.

****

DOE/EA-0696 *Construction of Temporary Mobile Office Complex, 200 West Area, Hanford Site, Richland, Washington*, June 1992.

The FONSI was approved June 12, 1992.

****

DOE/EA-0787 *Shipment of Low Enriched Uranium Billets to the United Kingdom from the Hanford Site, Richland, Washington*, August 1992.

The FONSI was approved August 27, 1992.

****

DOE/EA-0802 *Tank 241-SY-101 Equipment Installation and Operation to Enhance Tank Safety, Hanford Site, Richland, Washington*, August 1992.

The FONSI was approved August 13, 1992.

****

DOE/EA-0803 *Proposed Pump Mixing Operations to Mitigate Episodic Gas Releases in Tank 241-SY-101, Hanford Site, Richland, Washington*, September 1992.

The FONSI was approved September 18, 1992.

****

DOE/EA-0809 *Thermocouple Tree System Installation and Operation in Non-Leaking Ferrocyanide Tanks, Hanford Site, Richland, Washington*, September 1992.

The FONSI was approved September 18, 1992.

****

DOE/EA-0876D *Construction and Operation of Particle Accelerator Bio-Physical Laboratory*, draft.

The EA was transmitted to Laboratory Management Division (LMD) on November 17, 1995 by PNL. It has been reviewed by LMD and PNL is resolving the differences in scope between the draft EA and the Functional Design Criteria. As of June 8, 1995, the EA was still actively in the review process.

****

DOE/EA-0881 *Tank 241-C-103 Organic Vapor and Liquid Characterization and Supporting Activities, Hanford Site, Richland, Washington,* August 1993.

The FONSI was approved August 10, 1993.

****

DOE/EA-0904 *Access Road From State Route 240 to the 200 West Area, Hanford Site, Richland, Washington*, February 1994.

The FONSI was approved March 10, 1994.

****

DOE/EA-0915 *Waste Tank Safety Program, Hanford Site, Richland, Washington*, February 1994.

The FONSI was approved February 25, 1994.

****

DOE/EA-0921* *Proposed Relocation and Resumption of DOE Radon Research Program in the 300 Area*, October 1994.

The FONSI was approved on October 19, 1994.

****

DOE/EA-0933* *Tank 241-C-106 Past-Practice Sluicing Waste Retrieval, Hanford Site, Richland, Washington*, February 1995

The FONSI was approved February 17, 1995

****

DOE/EA-0942 *Return of Isotope Capsules to the Waste Encapsulation and Storage Facility, Hanford Site, Richland, Washington*, May 1994.

The FONSI was approved May 11, 1994.

****

DOE/EA-0944* *222-S Radioactive Liquid Waste Line Replacement and 219-S Secondary Containment Upgrade, Hanford Site, Richland, Washington*, January 1995.

The FONSI was approved January 24, 1995.

****

DOE/EA-0959 *Resiting, Construction and Operation of the Environmental and Molecular Sciences Laboratory at the Hanford Site, Richland, Washington*, July 1994.

The FONSI was approved July 7, 1994.

****

DOE/EA-0978* *Sludge Stabilization at the Plutonium Finishing Plant, Hanford Site, Richland, Washington*, October 1994

The FONSI was approved October 19, 1994

****

DOE/EA-0980* *300 Area Process Sewer Piping Upgrade and 300 Area Treated Effluent Disposal Facility Discharge to the City of Richland Sewage System, Hanford Site, Richland, Washington*, May 1995

The FONSI was approved May 25, 1995.

****

DOE/EA-0981D* *Project W-113/-112 Solid Waste Retrieval Phase I and Enhanced Radioactive and Mixed Waste Storage Phase V*, draft.

The EA has been sent to the State and Tribes for review and comment. Comments have been received and responses are being prepared. It is anticipated that this EA will be finalized in late fiscal year (FY) 95 or early FY 96.

****

DOE/EA-0982D* *Special Case Material, Construction and Operation of a Storage Unit*, draft.

The EA has been modified to reflect a new work scope and is being prepared for submittal to U.S. Department of Energy, Richland Operations Office (RL). The EA is expected to be issued for a stakeholder review in early FY 96.

****

DOE/EA-0983* *Inert/Demolition Waste Landfill (Pit 9), Hanford Site, Richland, Washington*, May 1995

The FONSI was approved May 15, 1995

****

DOE/EA-0984* *Deactivation of the N Reactor Facilities, Hanford Site, Richland, Washington*, May 1995

The FONSI was approved May 1, 1995

****

DOE/EA-0985* *Relocation and Storage of TRIGA Reactor Irradiated Fuel, Hanford Site, Richland, Washington*, August 1995.

The FONSI was approved by RL on August 10, 1995.

****

DOE/EA-0986D* *Project L-116, 200 Area Sanitary Sewer System*, draft.

The EA has been sent to the State and Tribes for review and comment. Comments have been received and responses are being prepared. It is anticipated that this EA will be finalized in FY 96.

****

DOE/EA-0987* *Disposition of Alkali Metal Test Loops, Hanford Site, Richland, Washington,* May 1995

The FONSI was approved May 1, 1995

****

DOE/EA-0988* *Transfer of Plutonium-Uranium Extraction Plant and N Reactor Irradiated Fuel for Storage at the 105-KE and 105-KW Fuel Storage Basins, Hanford Site, Richland, Washington,* July 1995

The FONSI was approved July 12, 1995

****

DOE/EA-0992D* *Decontamination and Decommissioning of Building 233-S, Plutonium Concentration Facility*, draft.

The EA is being prepared by Bechtel Hanford, Inc. (BHI). Because of schedule changes regarding 232-Z, the decontamination and decommissioning (D&D) of 232-Z has been separated out as a separate NEPA issue (see DOE/EA-1098D).

****

DOE/EA-0993* *Shutdown of Fast Flux Test Facility, 400 Area, Hanford Site, Richland, Washington*, May 1995.

The FONSI was approved May 1, 1995

****

DOE/EA-1005* (2 volumes) *Disposition and Transportation of Surplus Radioactive Low Specific Activity Nitric Acid, Hanford Site, Richland, Washington*, May 1995

The FONSI was approved May 15, 1995.

****

DOE/EA-1030* *Characterization of Stored Defense Production Spent Nuclear Fuel and Associated Materials at Hanford Site, Richland, Washington*, March 1995.

The FONSI was approved March 13, 1995.

****

DOE/EA-1098D* *Decommissioning and Decontamination of Building 232-Z at the Hanford Site, Richland, Washington*, draft.

Due to new information concerning plutonium inventory in 232-Z which indicates that there is more plutonium in the facility than originally expected, the preparation of the EA has been delayed.

****

2.2 Summaries of Hanford Site EAs

DOE/EA-0021 *Decommissioning and Decontamination Activity, Hanford Building Disposal Demonstration Project, REDOX Plutonium Concentration (233-S) Building, Hanford Site, Richland, Benton County, Washington*, March 1978.

Background: This EA proposed to decontaminate, dismantle, and decommission a retired nuclear process facility. The Reduction Oxidation Plant Plutonium Concentration Building (233-S) in the 200 West Area was selected as the first demonstration project under the DOE program for disposition of retired contaminated facilities at the Hanford Site.

The project would include decontamination and removal of all building equipment. The building surfaces and shell would be decontaminated to the point where demolition could proceed with minimal expense, with the option of leaving the structure standing and available for other use.

All equipment that could not be decontaminated to acceptable levels would be sealed and placed in a retrievable storage trench designated for transuranic (TRU)-contaminated waste. If the 233-S Building was dismantled, contaminated rubble also would be stored in this trench.

FONSI: The FONSI was not required because the EA was written before the CEQ's final regulations were issued.

Current Status: The proposed action in the EA was never completed. The 233-S Building was never decontaminated or dismantled. The ventilation system in the 233-S Building has been maintained to keep the contamination level below regulatory standards.

Soon after the EA was drafted, the DOE determined that the EA would not be finalized. It was later determined that the D&D of the 233-S Building and the 232-Z Waste Incineration Facility would be addressed in a combined EA. Subsequently, a decision has been made to address decommissioning of these buildings in two EAs (See DOE/EA-0992D, and DOE/EA-1098D).

For more information concerning the current status of this facility, contact M. C. Hughes at 373-1184.

****

DOE/EA-0030D *Operation of N Reactor and Fuels Fabrication Facilities, Hanford Reservation, Richland, Washington*, draft.

The EA was abandoned and never finalized.

****

DOE/EA-0044 *Support Services Building, Hanford Reservation, Richland, Washington*, July 1978.

Background: This EA proposed construction of a permanent building, the Support Services Building (designated the 4713-B Building), to provide central maintenance shops for nonradioactive equipment; offices; and other administrative support facilities, conference rooms, and a lunchroom. The building would be located in the 400 Area of the Hanford Site. The building was scheduled to be completed by the first quarter of fiscal year (FY) 1982. Anticipated design life for the building was to be 20 years.

FONSI: A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

Current Status: The facility was constructed and is operating under the mission stated in the EA.

For more information concerning the current status of this facility, contact P. C. Miller at 376-0441.

****

DOE/EA-0048 *National Waste Terminal Storage Program, Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, June 1978.

Background: This EA proposed drilling five boreholes on the Hanford Site to collect data on in situ rock formations. The project was part of the National Waste Storage Program to find potentially suitable nuclear waste repositories. The five boreholes were to be drilled to obtain subsurface geologic and hydrologic information. The holes would range from 1,160 to 1,525 meters (3,805 to 5,002 feet) deep.

Three drilling sites were selected. Site 1 would contain boreholes ARH-DC-4 and ARH-DC-5, approximately 2.4 kilometers (1.5 miles) west of the 200 West Area. Site 2 would contain borehole ARH-DC-6, approximately 8 kilometers (5.0 miles) east of Gable Mountain near the old Hanford townsite. Boreholes ARH-DC-7 and ARH-DC-8 will be in Site 3 just southeast of the Wye Barricade.

Two different types of boreholes were proposed. Stratigraphic boreholes (ARH-DC-4, ARH-DC-6, and ARH-DC-8) were primarily intended to provide

core samples of the various subsurface geologic formations. Hydrologic boreholes (ARH-DC-5 and ARH-DC-7) were primarily intended to provide information on subsurface aquifers.

Special Notice: An EA on exploratory borehole ARH-DC-2 was prepared by the ERDA and assigned the ERDA document control number EIA/WPR/77-3. In addition, the ERDA Assistant Administrator for Environment and Safety determined that an EA was not necessary for exploratory borehole ARH-DC-3, based on the proximity of the borehole to ARH-DC-2 and the EA on borehole ARH-DC-2.

FONSI: A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

Current Status: Borehole ARH-DC-4 was plugged August 5, 1988; the reclamation was completed August 19, 1988. Borehole ARH-DC-5 was plugged July 12, 1988; the reclamation was completed August 1, 1988.

Borehole ARH-DC-6, originally scheduled for abandonment, was reconfigured following a review and concurrence of the recommended change by the Washington State Department of Ecology (Ecology) and was transferred to the PNL. This borehole was retained to support future onsite studies.

Borehole ARH-DC-7 was plugged September 15, 1988; the reclamation was completed September 29, 1988. Borehole ARH-DC-8 was plugged September 22, 1988; the reclamation was completed September 30, 1988.

****

DOE/EA-0052 *National Waste Terminal Storage Program, Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, December 1978.

Background: This EA proposed building a Near-Surface Test Facility (NSTF) to support the Basalt Waste Isolation Project (BWIP). The facility would provide the capability for in situ testing of basalt on the Hanford Site to produce data necessary to determine if the basalt was suitable as a commercial radioactive waste repository. The EA proposed mining a portion of the selected underground basalt flow in Gable Mountain, conducting electrical (non-nuclear) heater tests and commercial spent fuel tests for a period of three years each, and decommissioning the test facility.

The data obtained from the electrical heater tests and the spent fuel tests would provide information to assist in determining if basalt was suitable as a radioactive waste repository.

The facility would contain approximately 1,000 meters (3,280 feet) of underground workings, including three access tunnels, two test rooms, an instrumentation room, and a computer room. Phase I of the tests was to develop the electrical heater test portion of the facility and was scheduled for completion by late 1979. Work on Phase II, the spent fuel test portion, was scheduled for completion by late 1980.

The construction site for the test facility would be near the site of exploratory borehole ARH-DC-11. An open cut, approximately 15 meters (49 feet) deep and 15 meters (49 feet) wide, would be made for each of the three portals of the facility to allow access to the Pomona basalt flow. The horizontal access tunnels at the west end of the facility would serve as entrances to the two test areas. The east access tunnel would be used for ventilation purposes and as an emergency exit. Isolation from the environment would be maintained by keeping the Phase II test area at a negative pressure and installing exclusion doors at both ends of the test area.

Following the completion of the three year electrical heater and spent fuel tests, decommissioning would begin. The canistered spent fuel would be removed from the NSTF and shipped back to the Engine Maintenance and Disassembly Facility at the Nevada Test Site. Test decommissioning would include removal of test hardware, wiring, and the protective coverings on the test holes. Facility decommissioning would include removal of facility fittings, backfilling the entrance and exit portals with previously mined rock, and restoring the site.

The NSTF would complement efforts to characterize the geologic and hydrologic properties of basalt formations on the Hanford Site. There were five boreholes planned for FY 1978 that obtained information from basalt formations as deep as 465 meters (1,525 feet) underground. The five boreholes (ARH-DC-4, ARH-

DC-5, ARH-DC-6, ARH-DC-7, and ARH-DC-8) were designed to provide geologic and hydrologic information and could not be used to obtain information on in situ thermal properties of the basalt formations they penetrated. The NSTF exploratory boreholes ARH-DC-10 and ARH-DC-11 on Gable Mountain would provide specific information about the basalt flows in Gable Mountain.

FONSI: A FONSI was not required because the EA was written before the CEQ's final regulations were issued.

Current Status: The NSTF was constructed and under operation, but all activities at the NSTF were terminated with cancellation of the BWIP. All facility equipment has been removed. Borehole ARH-DC-11 and the NSTF were backfilled with crushed material, and concrete bulkheads were installed.

The exploratory borehole (ARH-DC-10), which was drilled in 1978, was not backfilled. Construction of the NSTF Trailer Village in 1979 resulted in the removal of the collar casing from borehole ARH-DC-10, and alteration of the borehole site. During the summer of 1988, an excavation attempt to locate the borehole was unsuccessful. A hydrologic evaluation of the subsurface groundwater flow in the vicinity of borehole ARH-DC-10 revealed a natural commingling of the unconfined and confined aquifers in the Gable Gap area. As a result of this naturally occurring erosional window, the impact of leaving borehole ARH-DC-10 open was minimal. This evidence was presented to Ecology for evaluation, resulting in a waiver issued on July 21, 1989, which stated that borehole ARH-DC-10 could be abandoned in its present condition.

****

DOE/EA-0102 *Steam Generator Tube Integrity Program, Surry Steam Generator Project, Hanford Site, Richland, Washington*, March 1980.

Background: This EA proposed constructing and operating a 150-square meter (1,614-foot) facility, now known as the 377 Building in the 300 Area, to house and conduct extensive investigation of a degraded, out-of-service steam generator from a commercial nuclear power plant. This testing program was intended to provide the U.S. Nuclear Regulatory Commission (NRC) with information regarding the integrity and degradation of the pressurized water reactor primary system.

FONSI: A FONSI was approved March 27, 1980, and published in the FR April 2, 1980 (45 FR 21676).

The following actions were included in the FONSI:

- The transportation of a defective steam generator by oceangoing barge from the Virginia Electric Power Company Surry Nuclear Power Station in Virginia to the DOE Hanford Site.
- The construction of a temporary storage facility for the generator and a steam generator examination facility.
- The performance of various research operations on the steam generator to determine why it failed in service.

Current Status: The 377 Building has been decontaminated and, as of August 1980, is vacant.

For more information, contact P. J. Crane at 373-3331.

****

DOE/EA-0111 *Maintenance and Storage Facility, Hanford Site, Richland, Washington*, May 1980.

Background: This EA proposed to build the Maintenance and Storage Facility (MASF), now known as the 437 Building, as a multipurpose service center to support the specialized maintenance needs of the 400 Area facilities at the Hanford Site. The MASF provided sodium removal from, and storage of, nonfuel components for the FFTF and provided decontamination, repair, and storage of the FFTF maintenance support equipment and operational support equipment.

The MASF would be a concrete and steel structure located in the 400 Area. Approximately 2,080 square meters (22,380 feet) of storage, repair, and process space are serviced by a 60-ton overhead crane with a hook height of 9 meters (29.5 feet). An additional 780 square meters (8,393 feet) house process equipment, a liquid waste loadout facility, and personnel support facilities.

The facility was designed for a 25-year operating cycle. The number of personnel working in the facility ranges from 17 (normal complement) to a maximum of 45 personnel during periods of major maintenance and refueling of the FFTF.

Waste from the MASF included radioactive liquids from sodium removal and cleaning, radioactive and nonradioactive solid waste, process and sanitary wastewater, and exhaust air. Process and sanitary water are treated and released to the 400 Area ponds. The radioactive liquids and the radioactive and nonradioactive solid waste are handled as described in the EIS (Chapter 5, ERDA-1538). No operations involving nuclear fuel or TRU were planned for the MASF.

The project's proposed cost was approximately $16.7 million and construction started in FY 1982.

FONSI: A FONSI is not available; this EA was completed before the CEQ's final regulations were issued in 1980.

Current Status: The MASF was built as described in the proposed action and is operational.

For information concerning the current status of this facility, contact M. T. Jansky at 376-3854.

****

DOE/EA-0116 *Fuels and Materials Examination Facility, Hanford Site, Richland, Washington*, July 1980.

Background: This EA proposed providing the Fuels and Materials Examination Facility (FMEF) with fuel development, fuel fabrication, and irradiated fuel and materials

examination capabilities in support of the FFTF and other reactors in the liquid metal fast breeder reactor (LMFBR) program. The FMEF (or 427 Building) would have had approximately 15,793 square meters (169,932 feet) of floor space and was to be located in the 400 Area of the Hanford Site.

The FMEF was to contain laboratory space and facilities to support the development of radioactive fuel fabrication processes, equipment, and handling systems. Laboratory space also was to be provided for fabrication of the FFTF and the LMFBR fuel experiments, and to accommodate the radioactive analytical functions that supported fuel fabrication activities. Post-irradiation examination activities would have been carried out mainly in a centrally located shielding cell complex. This cell complex was to have capabilities for both nondestructive and destructive examination, as well as equipment for disassembly and reassembly of fuel and other reactor core
component assemblies. A ground-level entry wing would have provided offices, a lunchroom, a change room, and other support facilities to the operation staff and security personnel.

FONSI: The FONSI was approved July 14, 1980.

The following actions were included in the FONSI:

- The proposed facility had fuel development, fabrication, and examination capabilities in support of the FFTF and other reactors in the LMFBR program, and would have been equipped to receive special nuclear material in powder form; prepare feed stock; analyze fuels and fuel materials; fabricate test fuel pins; and develop fuel manufacturing processes, equipment, and handling systems to meet established safeguards, security, and environmental criteria.

- The proposed facility was equipped to receive; clean; nondestructively examine; and disassemble irradiated fuels, materials, and core components from the FFTF and other LMFBRs. The proposed facility also was to be equipped to receive nondestructively and destructively examined individual fuels, blanket and absorber pins, and reassembled selected fuel assemblies or other materials for additional irradiation after nondestructive examination.

- The proposed facility was designed to contain all radioactivity in the event of a design-basis tornado or design-basis earthquake.

- All exhaust gases were to be filtered before being released. Exhaust gases from cells and glove boxes would have passed through a series of three high-efficiency particulate air (HEPA) filters, while exhaust gases from areas containing irradiated fuel material would have passed through HEPA filters and activated charcoal filters. The estimated maximum dose rate at the 400 Area boundary from releases during normal operations of the facility would have been

approximately 2.9 x 10^{-8} millirem (mrem) per hour to the whole body, which would have been negligible when compared to natural background radiation levels of about 0.01 mrem per hour.

- The environmental effects of disposal of all radioactive and nonradioactive waste would have been negligible and would not have affected the conclusions reached in ERDA-1538 (see Chapter 5).

Current Status: Construction of the FMEF has been completed. However, proposed activities in the facility have not been performed.

****

DOE/EA-0120 *100 F Area Decommissioning Program, Hanford Site, Richland, Washington,* October 1980.

Background: The DOE proposed to decommission the 100-F Reactor Area at the Hanford Site. The 100-F Reactor decommissioning program was a full-scale D&D demonstration project to remove or stabilize all radioactive materials in the 100-F Area.

FONSI: The FONSI was published in the FR August 22, 1980 (45 FR 56125).

The following actions were included in the FONSI:

- Complete decontamination and dismantling of the 105 Building (the retired F Reactor building), the 115 and 117 Buildings (ancillary buildings near the reactor), the 107-F Retention Basin and 116-F2 Liquid Waste Trench, and the 100-F and 141-C Buildings (biology buildings). In addition, six radioactive solid waste burial grounds and seven contaminated liquid waste disposal facilities (cribs and trenches) in the 100-F Area were isolated in place or, in a few cases, exhumed for removal to more suitable burial grounds.

- All contaminated material resulting from the decommissioning activity was transported within the controlled area of the Hanford Site by truck or rail to approved disposal facilities in the 200 Area. Approximately 454,248 liters (120,012 gallons) of contaminated liquid were shipped to the 200 West Area by 75,708-liter (20,000-gallon) railway tank cars for evaporation to a solid state and subsequent in-tank storage.

Contaminated waste (approximately 2,830 cubic meters [100,000 cubic feet] each year during each of the four years of decommissioning) was transported to the 200 Areas.

Current Status: As of May 1993, the entire 100-F Area was D&D'd except for the 105-F Building (reactor), the 107-F Retention Basin, and the 108-F Building (biology laboratory). The decommissioning of the 105-F Building has been covered by the EIS for decommissioning of eight surplus production reactors at the Hanford Site [DOE/EIS-0119(F), Chapter 6]. The 108-F Building was scheduled to be decommissioned in 1993. The schedule for decommissioning the 107-F Retention Basin has not been decided. There has not been any activity since 1992. A characterization demonstration is scheduled for FY 1996. Cocooning on the 105-F is tentatively scheduled for the year 2003.

For more information concerning the current status of this project, contact M. A. Mihalic on 373-1382

****

DOE/EA-0188 *Basalt Waste Isolation Project, Exploratory Shaft Construction, Hanford Site, Richland, Benton County, Washington*, September 1982.

Background: This EA proposed to excavate an exploratory shaft for the BWIP. The BWIP was to be used by the National Waste Terminal Storage Program organization to conduct studies to assess the feasibility of safe geologic disposal of commercial nuclear HLW in basalt formations.

Detailed site studies would be conducted on the Hanford Site through the construction of an exploratory shaft. This EA described the environmental effects expected to result from construction of this shaft. Other activities would have been to characterize the site, such as seismic surveys and underground testing at the base of the shaft, but were determined not to have potential for significant environmental impacts; and, therefore, were not covered in this EA.

The proposed site for the exploratory shaft was located within the area identified for the potential repository, an approximately 47-square-kilometer (18-square-mile) portion about 1.6 kilometers (1 mile) west of the 200 West Area.

FONSI: The FONSI was published in the FR September 16, 1982 (47 FR 40820).

The following actions were included in the FONSI:

- Construct an exploratory shaft.
- Gather information about the site to aid in evaluating the suitability of the site for use as a nuclear waste repository.

Current Status: The BWIP project was terminated in 1987. The BWIP exploratory shaft was filled with concrete and the surface area around the shaft was replanted with vegetation. No other work has occurred at the site.

****

DOE/EA-0258D *Breeder Reprocessing Engineering Test (BRET) Facility, Hanford Site, Richland, Washington*, draft.

The EA was abandoned and never finalized for review and approval by DOE.

****

DOE/EA-0259 *Decommissioning of Strontium Semiworks Facility, Hanford Site, Richland, Washington*, May 1985.

Background: This EA proposed that the Strontium Semiworks Complex be decommissioned to significantly reduce both the potential radiological hazard and the costs of continuing surveillance and maintenance. The Strontium Semiworks Complex is located in the 200 East Area of the Hanford Site. This facility was last used for processing radioactive materials in 1967. From 1967 to 1985, the facilities were maintained in a safe storage mode that required routine surveillance and maintenance.

The Strontium Semiworks Complex included 11 structures. The main structure is the 201-C Process Building, which is made up of three concrete cells in which radionuclides were processed and two other concrete cells for storage and loadout of the product. Attached to the 201-C Process Building were sample and pipe galleries, a maintenance shop, and treatment facilities for process water and air. Other structures in the complex included a solvent handling building, a ventilation system, and underground storage tanks. The proposed decommissioning method for the 201-C Process Building called for demolition of the service galleries and B-Cell to an abovegrade 3-meter (10-foot) elevation. The remaining service galleries and cells would then be filled with concrete and the site covered with an earthen barrier. Alternatives for the remaining 10 structures were limited to the choice of "no-action" or various degrees of D&D.

FONSI: The FONSI was approved May 15, 1985.

The following actions were included in the FONSI:

- Decontaminate three of the buildings and return them to beneficial use.
- Dismantle and demolish the aboveground ancillary structures and entomb the below ground structures with concrete.

- Demolish the main process building to less than or equal to 3 meters (10 feet) above grade and fill with concrete and rubble.

- Cover all entombed facilities with an engineered earthen barrier equivalent to 5 meters (15 feet) of clean soil and stabilize with vegetation.

Current Status: As of May 1993, the decommissioning of the Strontium Semiworks Facility was partially completed, with the remainder of the cleanup included in later *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) remediation activities.

For more information concerning the current status of this facility, contact O. R. Rasmussen at 373-4147.

****

DOE/EA-0312 *Grouting and Near-Surface Disposal of Low-Level Radioactive Phosphate/Sulfate Wastes from N Reactor Operation, Hanford Site, Richland, Washington,* December 1986.

Background: This EA proposed that liquid radioactive phosphate and sulfate low-level waste (LLW) generated from N Reactor operations be disposed in near-surface concrete vaults using cementitious grout. The waste disposal operations would be performed in the 200 East Area of the Hanford Site.

The proposed action was to solidify this waste by mixing them with cementitious dry materials (cement, flyash, and clays) to form a grout slurry. The grout slurry would be pumped to vaults located at a near-surface disposal site in the 200 East Area. After the grout solidified, the vaults would be covered with approximately 5 meters (15 feet) of soil. The alternative to solidification was continued storage in double-shell tanks (DST).

Analyses of the potential operational and long-term effects of the grout disposal indicated that radionuclide dose rates and chemical releases would be below regulatory limits with no significant adverse health or environmental impacts.

FONSI: The FONSI was approved November 21, 1986.

The following actions were included in the FONSI:

- The two types of liquid radioactive LLW generated during N Reactor operations would be solidified by mixing the waste with cementitious dry materials (cement, flyash, and clays) to form a grout slurry.

- The grout slurry would be pumped into covered vaults located at a near-surface disposal site in the 200 East Area of the Hanford Site, where it would solidify.

- After the grout slurry solidified, the vaults would be covered with 5 meters (15 feet) of soil.

- The vault disposal would be designed to meet all *Resource Conservation and Recovery Act of 1976* (RCRA) requirements.

- The proposed action to dispose of phosphate and sulfate waste could result in some minor releases of radionuclides to the atmosphere. The total body dose to a maximally exposed offsite individual for routine operations was estimated to be 3×10^{-12} mrem for a one year dose and 1×10^{-10} mrem for a 50-year dose.

Current Status: The Grout Treatment Facility and the phosphate-sulfate waste vault were constructed. The proposed action to fill the vault with grout slurry and solidify the waste was completed in accordance with the FONSI.

For more information concerning the Grout Treatment Facility, contact B. F. Archer at 376-4779.

****

DOE/EA-0318 *SP-100 Ground Engineering System Test Site, Hanford Site, Richland, Washington,* December 1988.

Background: This EA proposed modifying an existing reactor containment building (decommissioned Plutonium Recycle Test Reactor in the 309 Building) to provide ground-test capability for the prototype SP-100 Reactor. The 309 Building is located in the 300 Area on the Hanford Site.

The DOE, the National Aeronautics and Space Administration, and the U.S. Department of Defense entered into an agreement to jointly develop and fund space nuclear reactor power systems. The goal was to develop safe, compact, lightweight, and durable space reactor power systems to provide electrical power in the range of tens to hundreds of kilowatts. These space reactor power systems would make possible a broad class of emerging military and civil space missions in the early to mid-1990's and beyond. The DOE has primary responsibility for developing and ground-testing the nuclear subsystem. As part of this program, it was proposed that the SP-100 test reactor (maximum rating of 2.5 megawatt thermal [MWt]) be tested in the existing 309 Building. A ground test of a prototype was necessary to demonstrate the readiness of this major subsystem before proceeding with the flight system development and demonstration.

Following the test, it was anticipated that the reactor and associated hardware would be disposed of as LLW on the Hanford Site and that the enriched fuel material would be reprocessed and reused. Any TRU waste generated from reprocessing would be stored on the Hanford Site and ultimately sent to the Waste Isolation Pilot Plant (WIPP) in New Mexico. An alternative to reprocessing would be to dispose of the spent fuel at a DOE geologic repository constructed in accordance with the NWPA. Test facility systems external to the reactor and associated hardware would be put in a safe condition pending future use or ultimate decommissioning. Alternatives for D&D were still under review when the FONSI was written.

FONSI:

Based on the analyses in the EA, the DOE approved a FONSI on December 15, 1988 (53 FR 50444), and distributed the EA and proposed FONSI for a 30-day public review period. The review period was later extended to 45 days. The DOE reviewed the comments and concluded that no new information was made available that would change the determination that the proposed action did not constitute a major federal action significantly affecting the quality of the human environment within the meaning of the NEPA. The FONSI was reissued September 27, 1989, and provided a 30-day public comment period (54 FR 39564).

The following actions were included in the FONSI:

- Following the test, it was anticipated that the reactor and associated hardware would be disposed of as LLW on the Hanford Site and that the enriched fuel material would be reprocessed and reused.

- Any TRU waste generated from reprocessing would be stored on the Hanford Site and sent to the WIPP in New Mexico when it becomes fully authorized as a disposal facility.

- Alternatives for D&D of the 309 Building were still under review.

- The projected annual airborne release of argon-41 was 3.7 curies, and the projected release of tritium was 0.047 curies.

- The maximum whole body dose to the nearest resident from these releases was projected to be 0.00045 mrem. The 50-year whole body dose commitment for the population within 80 kilometers was projected to be 0.0027 person-roentgen equivalent man (rem). The maximum offsite individual whole body dose was significantly smaller than the regulatory limit of 25 mrem per year whole body dose and the annual dose from background radiation of 100 mrem. No employee was expected to receive a dose greater than 1 rem per year in everyday work areas or during maintenance.

- Reactor heat (up to 2.5 MWt) was to be dissipated to the atmosphere using forced-air dump heat exchangers. In addition, air conditioning would remove heat from support areas.

- The SP-100 Ground Engineering System test activities would have generated hazardous, radioactive, and mixed waste. The estimated annual radioactive solid waste volume would have been less than 28 cubic meters (990 cubic feet), or seven percent of the total radioactive solid waste presently generated in the 300 Area.

- Minimal radioactive liquid waste would have been generated (less than 1,136 liters [300 gallons] each year), solidified, and disposed as solid radioactive LLW (included in the 28 cubic meters [990 cubic feet] discussed previously). No liquid waste was to be disposed in the soil. Radioactive LLW and mixed solid waste would have been buried in the Hanford Site 200 Areas Burial Ground. The projected amounts of radioactive LLW and mixed solid waste would have been less than one percent of the total volume presently handled by the 200 Areas Burial Ground.

- The 309 Building would have been modified to contain liquid metals and to minimize the effects of any liquid metal leakage.

- Commonly used hazardous materials, such as ethylene glycol, could be selected as the cooling medium in air conditioning systems.

- When the FONSI was written, a specific mission was not identified for the SP-100 nuclear reactor power system. Therefore, specific flight system design requirements and mission parameters were not available. When a specific mission using an SP-100 nuclear power system would have been proposed, the potential environmental impacts of that mission would require appropriate NEPA documentation by either National Aeronautics and Space Administration or the U.S. Department of Defense as part of the flight approval process.

Current Status: The proposed SP-100 Ground Engineering System Test Site project was terminated in 1994.

For more information concerning the current status of this facility, contact B. C. Cornwell at 376-1120.

****

DOE/EA-0358D *Handling and Transportation of Isotopic Heat Sources Prepared at the Hanford Site, Richland, Washington*, draft.

The EA was abandoned following German identification of a No Need for the source material.

****

DOE/EA-0370D *Fast Flux Test Facility Power Addition, Hanford Site, Richland, Washington*, draft.

The EA was abandoned when U.S. Department of Energy-Headquarters (DOE-HQ) questioned the future of the FFTF.

****

DOE/EA-0383 *Hanford Environmental Compliance Project, Hanford Site, Richland, Washington*, November 1991.

Background: This EA proposed covered 14 subprojects that were activities in the Hanford Environmental Compliance Program. The 14 subprojects covered four major types of activities:

- groundwater monitoring
- sample analysis capability
- modifications to existing facilities to reduce environmental impacts
- waste and effluent treatment, storage, and disposal.

FONSI: A FONSI was approved March 11, 1992.

The following actions were included in the FONSI:

- The subprojects scheduled for FYs 1989 and 1990 included Groundwater Monitoring Wells (W-017H), the B Plant Process Condensate Treatment Facility (W-007H), Waste Management Facilities Cathodic Protection (W-020H), the 300/400 Area Wastewater Facilities (V-791H), the Radioactive Mixed Waste (RMW) Storage Facility (W-016H), the Plutonium Finishing Plant (PFP) Liquid Low-Level Waste System Modification (B-680H), the PFP Liquid Effluent Treatment Facility (C-031H), B Plant Environmental Compliance Upgrades (W-010H), and the Waste Sampling and Characterization Facility (W-011H).

- The subprojects scheduled for FY 1991 included B Plant Radiological and Containment Upgrades (W-024H), Environmental Hot Cell Expansion (W-041H), and the 242-A Evaporator/Plutonium-Uranium Extraction (PUREX) Process Treatment Facility (C-018H).

- The subprojects scheduled for FY 1992 included the 300 Area Treated Effluent Disposal Facility (L-045H) and the 200 Areas Treated Effluent Disposal Facility (W-049H).

Current Status: As of September 1995, work is ongoing on the projects covered by this NEPA review.

For more information concerning the projects and specific project contact individuals, contact M.T. Jansky on 376-3854.

****

DOE/EA-0411D *Fuel Assembly Area, Hanford Site, Richland, Washington*, draft.

The EA was abandoned when DOE-HQ questioned the future of the FFTF.

****

DOE/EA-0429 *Environmental and Molecular Sciences Laboratory at the Hanford Site, Richland, Washington*, May 1990.

Background: This EA proposed building a laboratory that would house basic and applied resource components of the Environmental Science Research Center and the Molecular Science Research Center. The Environmental and Molecular Sciences Laboratory (EMSL) would provide, in a single location, the office and laboratory facilities necessary to: (1) conduct applied research directed toward environmental compliance and environmental remediation programs carried out by the DOE at the Hanford Site and at other DOE sites, and (2) conduct basic research at the molecular level in support of these and other DOE-sponsored applied-research programs.

The proposed EMSL would respond to a need for both basic and applied research required by the Research Development Demonstration Testing and Evaluation Program, and also would facilitate application of research to the Hanford Site, where as much as one-half of the DOE's hazardous and radioactive waste is stored or buried.

FONSI: The FONSI was approved September 17, 1992.

The following actions were included in the FONSI:

- The proposed laboratory is to be located at the south end of the Hanford Site 300 Area on a 8.093-hectare (20-acre) site near the Washington State University Tri-Cities campus.

- The EMSL would have approximately 18,580 square meters (200,000 square feet) of floor space and would contain laboratories, offices, model and machine shops, a graphics shop, conference rooms, a library, a kitchen, a lunchroom, and a lecture hall. Site development would require construction of utility extensions, driveways, parking lots, and landscaped areas.

- The building and site would be arranged to permit integration of laboratory and support activities with those of existing PNL facilities and other 300 Area facilities.

- The EMSL staff would consist of approximately 200 scientists, technicians, and support personnel. An additional 60 visiting scientists are expected to be working at the facility at any given time.

- If necessary, ear protection devices would be used in accordance with the DOE contractor safety requirements during construction of the proposed facility.

- If necessary, work areas would be sprayed with water to reduce fugitive dust emissions produced during construction activities.

Current Status: As of August 1993, the EMSL project was scheduled to break ground in the fall of 1993. Because of archeological finds, the facility had to be relocated on the Hanford Site. See DOE/EA-0959.

For more information, contact E. B. Moore, Jr., on 372-4213.

****

DOE/EA-0479 *Collecting Crust Samples from Level Detectors in Tank SY-101 at the Hanford Site, Richland, Washington*, November 1990.

Background: This EA proposed characterizing waste in Tank 241-SY-101. Characterization would have included removal of three level detectors and analyzing the waste encrusted on the detectors. Tank 241-SY-101 is located on land dedicated to DOE nuclear production and waste management. The EA stated that no terrestrial, aquatic, or air quality impacts would result from the crust sampling and analysis. The EA also stated that no routine or potential accidental impacts of the proposed action would have had a significant impact on the quality of the human environment.

FONSI: The FONSI was approved November 16, 1990.

The following actions were included in the FONSI:

- Tank 241-SY-101 primary ventilation system was to be operational during sensor retrieval to prevent buildup of hydrogen in the tank dome space and to keep airborne radioactive emissions well below the DOE and contractor guidelines.

- Procedures and administrative controls were to be in place before detector retrieval and replacement, so that radiation exposure to onsite personnel was kept below the DOE orders and contractor guidelines (5 and 3 rem per year, respectively). These administrative controls would ensure adherence to the philosophy of maintaining exposures as low as reasonably achievable (ALARA).

- Radioactive material, radioactively contaminated equipment (including the retrieved detectors after removal of crust materials), and RMW were to be packaged and stored or disposed at the Hanford Site. None of this waste was expected to contribute significantly to the volume of waste generated annually at the Hanford Site.

Current Status: As of September 1995, the proposed activities have been completed.

For more information, contact S. R. Tifft at 376-7479.

****

DOE/EA-0495 *Preparation for Crust Sampling of Tank 241-SY-101, Hanford Site, Richland, Washington*, February 1991.

Background: This EA proposed activities that support the anticipated core sampling of Tank 241-SY-101. These activities included obtaining surface crust samples and installing dome space sampling and monitoring equipment (plus supporting electronics). Installation or replacement of monitoring equipment and sampling of tank contents were normally a routine activity. However, given the concerns with hydrogen accumulation in Tank 241-SY-101 and the potential for secondary crust reactions, a safety assessment and this EA were prepared to ensure that the proposed action was conducted in a safe and environmentally sound fashion.

FONSI: The FONSI was approved February 15, 1991.

The following actions were included in the FONSI:

- An existing filtered ventilation system was to maintain negative pressure in the tank at all times to ensure that no radiological releases occurred.

- The crust samples were appropriately packaged and transported to Hanford Site laboratories.

- The samples were to be analyzed using approved procedures and analytical methods to determine exotherms, heat of reaction, and total organic carbon content. Thermogravimetric analysis (moisture content and water of hydration), analysis of anions (i.e., nitrate and nitrite), cations (i.e., sodium and aluminum), and other characteristics (i.e., specific gravity and other chemical species) were to be performed.

- The small quantities of waste generated from these analyses were to be properly packaged and stored or disposed in existing facilities on the Hanford Site.

- To maintain airborne radioactive emissions well below the DOE and contractor guidelines, the Tank 241-SY-101 primary ventilation system was to be operational during crust sampling and the installation and operation of the dome space gas sampling system.

- A backup exhaust system was to be available to provide containment if the primary ventilation system was lost.

- Appropriate administrative controls and monitoring procedures were to be in place before crust sampling and installation and operation of the dome space gas sampling system started. During laboratory analyses, these guidelines would keep hazardous chemical and radiation exposure to onsite personnel below the DOE orders and contractor guidelines (5 and 3 rem per year, respectively).

- Small quantities of hazardous materials (i.e., solvents and cleaning agents) generated were to be managed and disposed in accordance with applicable federal and state regulations.

- Radioactive material, radioactively contaminated equipment, and RMW were to be appropriately packaged and stored or disposed in existing facilities on the Hanford Site.

- Assuming no respiratory protection, the operator doses were expected to be no more than 45 mrem.

Current Status: As of September 1995, crust sampling of the Tank 241-SY-101 waste has been completed.

For more information, contact J.R. Biggs on 372-2678.

****

DOE/EA-0511 *Characterization of Tank 241-SY-101, Hanford Site, Richland, Washington,* May 1991.

Background: This EA proposed activities to support the characterization of Tank 241-SY-101, which is located in the 200 West Area of the Hanford Site. Activities were proposed to occur only during the sampling "windows" shortly after a tank venting (i.e., a major release of hydrogen to the dome space; when remaining hydrogen levels in the waste were the lowest). The proposed activities were the first five activities listed under the FONSI information.

Proposed actions would take place during the venting of "Window C," which was expected to occur in May 1991. Similar activities (i.e., auger sampling of the crust core drilling) were proposed to be conducted during future sampling windows to obtain additional information. Depending on the initial sample results and conditions in the riser locations, DOE proposed that such sampling activities be conducted up to six times. For each proposed future sampling activity, DOE would reconsider whether the risks of those activities were covered by existing safety and NEPA documentation. If not, an additional NEPA review would be conducted, as appropriate.

Installation or replacement of monitoring equipment, and sampling of tank contents would normally be a routine activity. However, given the unreviewed safety issue of hydrogen accumulation in Tank 241-SY-101, this EA was prepared to also ensure that the proposed action would be conducted in a safe and environmentally sound fashion.

FONSI: The FONSI was approved May 10, 1991.

The following actions were included in the FONSI. The first five activities were the EA-proposed actions.

- Install two remote television cameras in the dome space of Tank 241-SY-101.
- Complete penetrometer testing. As many as five penetrometer tests provided mechanical property data on the crust.
- Obtain as many as five samples of the crust using an auger sampler.
- Operate a microwave radar level gauge to provide additional monitoring of the tank crust surface level.
- Obtain a full-depth sample of tank contents from the crust to the bottom of the tank using a core drill in the "push mode" (i.e., no rotational motion would be applied to the drill). This core sample would provide the first waste material sample from beneath the crust. This waste would be analyzed and the data used to

determine the validity of synthetic studies and current modeling of hydrogen generation.

- Waste samples were to be appropriately packaged and transported to Hanford Site laboratories. The samples were to be analyzed using approved procedures and analytical methods. Waste generated from analyses were to be properly packaged and stored or disposed in existing facilities on the Hanford Site.

- The primary ventilation system was to be operated during waste sampling and the installation and operation of the dome space gas sampling system to maintain radioactive emissions well below the DOE and contractor limits. A backup exhaust system was to be available to provide containment should the primary ventilation system be lost.

- Appropriate procedures and administrative controls would be in place to keep radiation exposure to workers below the DOE orders and contractor limits (5 and 3 rem per year, respectively) in keeping with the ALARA policy.

- Radiation and hazardous chemical levels at the waste site, and exposure of workers directly involved, would continuously monitored during the proposed actions.

- Small quantities of generated hazardous materials generated would be managed and disposed in accordance with applicable federal and state regulations.

- Radioactive material, radioactively contaminated equipment, and RMW were appropriately packaged and stored or disposed in existing facilities on the Hanford Site.

- The potential consequences of this operation were considered small. Nevertheless, operating conditions were designed to further lessen the doses or likelihood of an accidental occurrence. Those operating conditions included factors such as continuous operation of the primary ventilation system, availability of the backup ventilation system, electrically bonding the riser cover and all equipment in and around the riser to the tank, and the use of spark-resistant tools.

Current Status: As of August 1993, evaluation and monitoring of the hydrogen buildup in Tank 241-SY-101 was underway.

For more information, contact S. R. Tifft at 376-7479.

****

DOE/EA-0533 *Vapor Space Sampling of Ferrocyanide Tanks, Hanford Site, Richland, Washington,* July 1991.

Background: This EA proposed sampling the vapor space of 24 Hanford Site waste single-shell tanks (SST) that contain ferrocyanide-nitrate compounds to determine whether they contained flammable or toxic gases. The DOE needed to take action to help define the required controls to prevent or mitigate the potential for an accident during future, more intrusive sampling and monitoring of these tanks. Given the unreviewed safety questions (USQ) associated with the consequences of a potential ferrocyanide-nitrate reaction, a safety assessment and an EA were prepared to ensure that the proposed action was conducted in a safe and environmentally sound manner.

Standard operating procedures for sampling HLW tanks were revised to reflect the potential presence of flammable and toxic gases. The proposed action was conducted using nonsparking materials, spark-resistant tools, a portable containment shelter, and plastic ground cover. The proposed activities involved Hanford Site ferrocyanide-containing tanks located on land dedicated to DOE waste management.

FONSI: The FONSI was approved August 2, 1991.

Based on anticipated findings, the DOE proposed to sample the vapor space of the Hanford Site SSTs containing ferrocyanide compounds for flammable and toxic gases. This sampling would help define the controls to prevent or mitigate potential accidents during future, more intrusive sampling activities.

The sampling was to be performed in two parts. The first part would involve gas flammability and toxic vapor tests using, respectively, an industry-standard, intrinsically safe gas flammability meter and gas detector (Draeger[1]) tubes. The second part would involve cryogenic sampling using a cold trap followed by chemical analyses of the condensed gases in the analytical laboratory. It was anticipated that both types of sampling would be done sequentially on the same day. Appropriate respiratory protection was to be used by personnel during these activities, as required by standard operating procedures. Analyses obtained provided data on the presence of any flammable or toxic gases.

Current Status: As of September 1995, tank characterization activities are ongoing.

For more information, contact S. R. Tifft at 376-7479.

****

[1]Draeger is a trademark of Dragerwerk Akliengesellschaft.

DOE/EA-0535 *105-KE and 105-KW Basins Fuel Encapsulation and Repackaging, 100-K Area, Hanford Site, Richland, Washington*, June 1992.

Background: This EA proposed to provide containment of fuel assemblies with damaged cladding that exposed the metallic uranium to basin cooling water. This containment would be accomplished by encapsulating the fuel assemblies in stainless steel containers. The proposed action would also allow for a full range of options for final fuel disposition.

FONSI: The FONSI was approved June 23, 1992.

The proposed action was divided into two phases that were included in the FONSI:

- Phase I would consist of activities required to support the encapsulation and repackaging work.
- Phase II would consist of encapsulating the fuel currently stored in the 105-KE Basin, repackaging the fuel stored in the 105-KW Basin, and preparing and disposing of all empty canisters.

Current Status: As of September, 1995, all of the necessary permits are in place; however, the original strategy was replaced by an alternative strategy by the Path Forward Document (WHC-SD-SNF-SP-005).

For more information, contact D. J. Watson, on 373-3250.

****

DOE/EA-0538 *Storage of Fast Flux Test Facility Unirradiated Fuel in the PFP Complex, Hanford Site, Richland, Washington*, January 1992.

Background: This EA proposed relocating unirradiated fuel, stored for the FFTF, from the 308 Building to Room 192A at the PFP. This relocation reduced security costs and improved the safety of the fuel during a seismic event. The EA analyzed the impact of the radiation exposure on workers during loading, transportation, and storage.

FONSI: A FONSI was approved January 9, 1992.

The following actions were included in the FONSI:

- Remove unirradiated FFTF fuel from the 308 Building and store it inside its shipping containers in Room 192A, 234-5Z Building.
- Modify Room 192A to accommodate placement and routine retrieval of the fuel.

- If actual radiological measurements indicated additional shielding was needed aft the fuel was in place, new shielding partitions would be installed.

- A gantry crane was to be assembled in Room 192A to assist in placing the shipping containers.

- Existing criticality detectors, security monitoring devices, and 120-volt electrical service were to be relocated to accommodate placement of the shipping containers.

- Temporary 440-volt electrical service was to be installed, if necessary, to operate the crane.

- All construction activities would occur within the 234-5Z Building.

- The fuel stored in the 308 Building was to be composed of fuel pins and fuel assemblies. Fuel pins were to be placed in shipping containers for shipment from the 308 Building to the 234-5Z Building. The fuel assemblies would be placed in radial reflector shipping containers.

- Both container types would be loaded onto trucks and transported approximately 43.5 kilometers (27 miles) to the 234-5Z Building. Appropriate precautions wo be taken to maintain the security of the fuel during transport.

Current Status: The fuel was relocated and the security area was removed by May 15, 1992.

For more information, contact R. H. Engelmann on 376-7485.

****

DOE/EA-0581 *Upgrading of the Ventilation System at the 241-SY Tank Farm, Hanford Site, Richland, Washington*, December 1991.

Background: This EA proposed upgrading the ventilation system at the 241-SY Tank Farm in the 200 West Area of the Hanford Site. Upgrades were necessary to provide safe ventilation to the 241-SY Tank Farm, which had a history of flammable gas buildup within the tanks (SY-101, SY-102, and SY-103).

FONSI: The FONSI was approved December 20, 1991.

The following actions were included in the FONSI:

- Immediate ventilation systems were to be upgraded. Upgrades included such activities as installing a "tee" section to the ventilation duct, installing a portabl

exhaust fan at the "tee" to provide a backup fan, and replacing the existing backup fan with a HEPA-filtered intake unit.

- Proposed future upgrade actions could include installing spark-resistant fans, installing permanent HEPA-filtered intake, and installing a 241-SY Tank Farm backup power supply.

Current Status: As of September 1995, the proposed action was completed.

For more information, contact S. R. Tifft at 376-7479.

****

DOE/EA-0582 *Expedited Response Action for the 200 West Area Carbon Tetrachloride Plume at the Hanford Site, Richland, Washington*, February 1992. (This document is also known as an Engineering Evaluation/Cost Analysis - Environmental Assessment, DOE/RL-91-32)

Background: On December 20, 1990, the U.S. Environmental Protection Agency (EPA) and the Ecology requested that DOE assess contamination and evaluate alternatives for conducting an Expedited Response Action (ERA). The ERA would address concerns that carbon tetrachloride contamination, located in the unsaturated soil beneath certain disposal sites in the 200 West Area, would continue to migrate, affecting the ground water. An ERA, also known as a removal action (defined in section 101(23) of the Comprehensive Environmental response, Compensation and Liability Act [CERCLA] of 1980, as amended), is intended to provide early remediation to reduce potential threats or prevent significantly-increased degradation that might occur if action were delayed until completion of the CERCLA remedial investigation/feasibility study and implementation of the final remedy selected in the CERCLA record of decision. DOE prepared an EE/CA-EA to evaluate alternatives for conducting an ERA before completion of the CERCLA remedial investigation/feasibility study for the 200-AP-1 and 200-AP-2 operable units where the carbon tetrachloride disposal sites are located.

The proposed ERA involved the installation and operation of a soil vapor extraction system with recovery of contaminants onto granular activated carbon, and offsite activated carbon regeneration at a RCRA permitted facility. The proposed action was intended to reduce the quantity of carbon tetrachloride and other volatile contaminants in the soil column in the 200 West Area. The proposed action would reduce the potential for contaminant migration from the soil column to the groundwater, and reduce potential exposure to workers in the area pending final cleanup remedies for the 200-AP-1 and 200-AP-2 operable units. The proposed action would help make the final remedies to be selected for cleanup of these operable units achievable.

FONSI: The FONSI was approved February 20, 1992.

The proposed ERA actions involved the installation and operation of soil vapor extraction systems with recovery of contaminants onto granular activated carbon, and offsite activated carbon regeneration at a RCRA permitted facility. The proposed action is intended to reduce the quantity of carbon tetrachloride and other volatile contaminants in the soil column in the 200 West Area. This would reduce the potential for contaminant migration from the soil column to the ground water, and reduce potential exposure to workers in the area pending final cleanup remedies for the 200-ZP-1 and 200-ZP-2 operable units. The proposed action would help make the final remedies to be selected for cleanup of these operable units achievable.

Current Status: As of September 1995, three vapor extraction remediation systems are operating continuously in the 200 West Area. The anticipated completion date is the year 2000.

For more information, contact R. H. Engelmann on 376-7485 or G. C. Henckel on 372-9381.

****

DOE/EA-0596 *Intrusive Sampling and Testing of Ferrocyanide Tanks, Hanford Site, Richland, Washington*, January 1992.

Background: This EA proposed intrusive sampling, testing, and analysis to support the characterization of 24 SSTs that have been identified as having the potential for explosive mixtures of ferrocyanide and nitrate-nitrite.

The sampling would provide an understanding of the ferrocyanide-nitrate waste and its potentially reactive behavior, so that the tanks could be maintained in a safe condition with minimal risk of explosion. Strategies that could be developed and selected to implement safe interim stabilization and safe ultimate disposal options would be identified. A further objective of the sampling was to obtain data to assess the hazards associated with planned future rotary, full-depth drilling of a core sample in ferrocyanide tanks containing salt cake.

FONSI: The FONSI was approved February 11, 1992. The FONSI discussed the intrusive sampling and testing of the salt cake in 13 of the 24 tanks and sampling of the sludge in the remaining 11 tanks. Equipment to be used by this project would include an auger, a sludge weight, and push-mode core samplers. Testing of the salt cake would use a penetrometer that would provide mechanical property data.

Current Status: As of September, 1995, sampling of 9 of the 11 ferrocyanide tanks was completed. It is expected that all the sampling would be completed by July 1996. This will complete the resolution of the ferrocyanide watchlist tank safety issues.

For more information, contact R.J. Cash on 373-3132.

****

DOE/EA-0618 *Integrated Voice/Data Telecommunications System, Hanford Site, Richland, Washington*, April 1992.

Background: This EA proposed installing a new telecommunication system on the Hanford Site. The updated system would replace the existing telecommunication system and would integrate voice and data capabilities into a single digital network. This new system also would be more efficient and represent a cost savings for the DOE.

FONSI: The FONSI was approved April 21, 1992.

The following actions were included in the FONSI:

- Construction of buildings to be used for switching stations. These buildings would be constructed in the 300, 100-N, 200 East, 200 West, and 400 Areas on the Hanford Site, and the 700 and 3000 Areas within the City of Richland.
- New communication cables (principal fiber optic cables) would be installed underground between the switching stations both onsite and offsite.
- Normal upkeep of the buildings, including repair and replacement of telecommunication lines, maintenance of buildings and utilities, and custodial services.

Current Status: The proposed action was completed and is in use.

For more information, contact B. F. Archer at 376-4779.

****

DOE/EA-0696 *Construction of Temporary Mobile Office Complex, 200 West Area, Hanford Site, Richland, Washington*, June 1992.

Background: This EA proposed construction and operation of a temporary mobile office and change room complex near the 272-WA Building in the 200 West Area of the Hanford Site. The temporary mobile office complex would consist of two 16-module office units, each consisting of approximately 1,362 square meters (14,800 square feet) of space and a separate four module change unit of about 340 square meters (3,700 square feet) containing change areas for personnel. The mobile office complex would accommodate 180 office personnel and would provide showers and changing areas for up to 50 operating personnel.

Alternatives: The alternatives in this EA were as follows.

- The no-action alternative was to not build the temporary mobile office complex.

- Five alternative sites were considered as possible locations for the temporary mobile office complex. Potential environmental impacts would have been essentially the same for all sites considered, and no alternative site had a higher overall rating than the site in the proposed action; therefore, the five alternative sites were dismissed from further consideration in the EA.

FONSI: A FONSI was approved June 12, 1992.

The following actions were included in the FONSI:

- Perform the work described in the proposed action.
- The work would be performed in a previously disturbed area.
- If deemed necessary, because of noise from construction work, ear protection devices would be used in accordance with the DOE contractor safety requirements.
- If deemed necessary, because of increased dust from construction, work areas would be sprayed with water to further reduce fugitive dust emissions.
- No operation at the mobile office complex would involve radioactive or hazardous materials.
- The sanitary sewer system would consist of a conventional septic tank and drain field with the effluent discharged to the soil. The sanitary waste system would be designed and constructed to operate in conformance with current Washington State and Benton-Franklin County regulations.
- An archeological study completed in the 200 West Area in 1990 revealed that the historic White Bluffs Road passes within several hundred feet of the proposed mobile office complex site (Chatters and Cadoret 1990). A buffer zone, which measured 18.3 meters (60 feet) in width, has been established on either side of the historic road, with no construction permitted.
- An archaeological zone, 100 meters (328 feet), wide was established on either side of the historic road. The proposed action does not fall within this archaeological zone. However, a cultural resources review would be completed before the start of construction if concerns about potential impacts to the archaeological zone arise as a result of the proposed action. Any requirements stipulated by the cultural resources review would be met.

Current Status: The construction of the temporary mobile office complex has been completed and the complex is occupied.

For more information, contact B. F. Archer at 376-4779.

****

DOE/EA-0787 *Shipment of Low Enriched Uranium Billets to the United Kingdom from the Hanford Site, Richland, Washington*, August 1992.

Background: This EA proposed shipping approximately 2,500 low-enriched uranium billets to the United Kingdom. These billets were fabricated for the manufacture of fuel by the Hanford Site N Reactor, but are now surplus because defense reactor operations have been discontinued at the Hanford Site. The EA specifically analyzed the loading and transportation of these billets, which would be divided into four shipments.

FONSI: The FONSI was approved August 27, 1992.

The FONSI included the following actions:

- The billets were to be loaded into closed-type International Standards Organization containers.
- The containers, with the billets enclosed, would be transported by truck to the Port of Seattle, approximately 344 kilometers (215 miles).
- After delivery to the port, the containers would be loaded aboard an oceangoing cargo vessel and transported to the United Kingdom.

Current Status: In February 1993, the last of the four shipments reached the United Kingdom.

For more information, contact R. H. Engelmann at 376-7485.

****

DOE/EA-0802 *Tank 241-SY-101 Equipment Installation and Operation to Enhance Tank Safety, Hanford Site, Richland, Washington*, August 1992.

Background: This EA proposed enhancing Tank 241-SY-101 safety. The DOE is responsible for the management and storage of HLW accumulated as a result of processing defense reactor irradiated fuels for plutonium recovery at the Hanford Site.. Tank 241-SY-101 has been found to release quantities of hydrogen gas at concentrations above the lower flammability limits (LFL).

The proposed action was to install and operate various instruments and equipment designed to mitigate the potential for an accident during continued waste storage in Tank 241-SY-101. This EA also allows for the accumulation of additional data on the chemical and physical properties of the waste in this tank.

The proposed action would include installing and operating the following:

- A multifunctional instrument tree to provide temperature and gas data
- A standard hydrogen monitoring system
- A fourier transform infrared spectrometer and a gas chromatograph to analyze gas constituents
- A velocity, density, and temperature tree to measure pressure as it relates to density and temperature
- A permanent inlet filter.

The EA also allowed for the installation of a plug gauge, removal of existing air lances, and various preparatory activities.

FONSI: The FONSI was approved August 13, 1992.

The FONSI included the following actions:

- Removal of four existing air lances
- Installation and operation of permanent inlet filters for the 241-SY Tank Farm
- Installation and operation in Tank 241-SY-101 of a multifunctional instrument tree, standard hydrogen monitoring system, a fourier transform infrared system, gas chromatographs, velocity-density-temperature probes, and a riser plug gauge
- The construction and installation of concrete pads to support the instrumentation and underground conduit for the power and instrumentation lines.

Current Status: As of approximately July 1993, the proposed activities have been completed.

For more information, contact J. W. Lentsch on 373-5252.

****

DOE/EA-0803 *Proposed Pump Mixing Operations to Mitigate Episodic Gas Releases in Tank 241-SY-101, Hanford Site, Richland, Washington*, September 1992.

Background: This EA proposed to take this action for defining controls required to mitigate the potential for an accident during continued waste storage in Tank 241-SY-101. The intent of installing and operating a mixer pump was to test the possibility of mixing the waste that causes trapped gas (hydrogen) bubbles to be released on a continuous

basis. Theoretically, releasing gas in this manner would eliminate the episodic gas releases, which periodically caused the gas weight percent to exceed the 25 percent LFL for the tank.

The proposed action consisted of the following activities:

- Remove a slurry distributor from a 106.68-centimeter (42-inch) riser in the tank
- Install, operate, and remove a mixer pump.

FONSI: The FONSI was approved on September 18, 1992. The FONSI included the removal of the existing slurry distributor from Tank 241-SY-101 and the installation, operation, and removal of a submersible mixer pump in the tank riser the sluicer was removed from.

Current Status: As of September 1995, the pump has been fabricated, installed, tested, and in use. The responsibility of the mixer pump is expected to be turned over Tank Farm Operations by January 1996.

For more information, contact J. R. Biggs on 372-2678.

****

DOE/EA-0809 *Thermocouple Tree System Installation and Operation in Non-Leaking Ferrocyanide Tanks, Hanford Site, Richland, Washington*, September 1992.

Background: This EA proposed the installation and operation of a thermocouple tree system in non-leaking ferrocyanide tanks. DOE records indicate that 24 HLW storage SSTs on the Hanford Site may each contain enough ferrocyanide, if heated sufficiently, to initiate a self-sustaining chemical reaction with the substantial quantity of nitrate-nitrite salts and/or saturated nitrate-nitrite solutions that exist in these tanks. A safety concern associated with the current in-tank temperature data focuses on the potential for localized areas in the waste to develop above-average temperatures (hot spots) as a result of radioactive decay. This could lead to a thermal runaway reaction or an explosion and release of radioactive material from the tanks. Although the proposed action to install one thermocouple tree (TCT) system in each of the 11 nonleaking ferrocyanide SSTs at the Hanford Site would be inadequate to ensure that all hot spots have been located; the additional temperature data provided would substantially improve the DOE's understanding of the ferrocyanide tanks.

The proposed action is to install and operate one TCT system in each of the 11 nonleaking SSTs containing ferrocyanide compounds at the Hanford Site.

FONSI: The FONSI was approved September 18, 1992.

The FONSI included the following actions:

- Gas sampling of each tank's vapor space would be conducted to ensure that no flammable gases greater than 20 percent of the respective LFLs were present. If flammable gas above these levels were detected, the TCT systems would not be installed in the tanks until additional evaluations were performed to ensure that flammable gas concentrations were at safe levels.

- The TCT systems would be lowered through a riser in each of the 11 tanks by a hydraulic crane, and up to 5,678 liters (1,500 gallons) of water per tank would be used to jet the TCT systems through the salt cake layer.

- The TCT systems would remain in the tanks indefinitely until future DOE decisions on tank waste remediation are made.

- Signals generated from individual thermocouple elements on the TCT systems would be transmitted by existing or newly installed cables, and the temperature data would be monitored manually or with existing or newly installed data acquisition systems at other Hanford Site locations.

Current Status: As of September 1995, all the thermocouple probes have been installed and are operational which completes the proposed action.

For more information, contact G. T. Dukelow at 373-4479.

****

DOE/EA-0881 *Tank 241-C-103 Organic Vapor and Liquid Characterization and Supporting Activities, Hanford Site, Richland, Washington,* August 1993.

Background: This EA proposed to sample the Tank 241-C-103 organic vapor and liquid waste. Because of the potential for ignition of the vapors from the floating organic layer in Tank 241-C-103, the DOE has declared the tank an Unreviewed Safety Question (USQ). Operations at this tank were curtailed because of this USQ, which had to be resolved before normal waste storage operations and routine surveillance can continue. This EA analyzed the characterization of the vapor space and the organic and aqueous waste layers. This characterization is needed to determine if a flammable condition within the tank is credible.

FONSI: The FONSI was approved August 10, 1993.

The FONSI included sampling of the vapor space and organic layer in the tank and measuring the thickness of the organic layer. The FONSI also addressed actions to support the sampling task and to ensure safe operating conditions in the tank, including: routine tank vapor space surveillance activities; instrument calibration;

preventive maintenance; installation and removal of small-scale components; breather filter testing; installation and removal of equipment for above ground facilities; installation and operation of a portable exhauster; small volume waste additions to the tank; and other activities that would not alter vapor space flammability.

Current Status: The liquid sampling of the organic layer was completed December 15, 1993. Vapor sampling was performed up to the issuance of a flammability report (which was called for by the *Hanford Federal Facility Agreement and Consent Order* [Tri-Party Agreement] [Ecology et al. 1992]) in June 1994. Routine surveillance of the tank is scheduled to continue.

For more information, contact D.A. Turner on 373-2238.

****

DOE/EA-0904 *Access Road From State Route 240 to the 200 West Area, Hanford Site, Richland, Washington*, February 1994.

Background: This EA proposed to construct an access road from state route 240 to the 200 West Area on the Hanford Site. The DOE determined that dangerous traffic conditions exist with the main highway that connects the city of Richland and the 200 Areas. Traffic studies indicate that there is a high probability of a fatal accident occurring in the next several years. A temporary solution to this problem would be to construct an access road connecting State Route 240 to the 200 West Area. This would reduce the vehicular traffic on the main highway to acceptable levels until future, permanent solutions are proposed and implemented.

FONSI: The FONSI was approved March 10, 1994.

The FONSI included the construction of a 3.5-kilometer (2.2-mile) two-lane road connecting State Route 240 to the 200 West Area. This project would include acceleration and deceleration lanes on State Route 240, a truck turnaround and guardhouse on the new road, and modifications to the security fencing in the area. Habitat enhancement activities, which would likely include revegetation of shrub-steppe habitat at other disturbed locations of the Hanford Site, would be adopted to offset the removal of this habitat.

Current Status: Construction activities have been completed and the access road is in use.

For more information, contact M. B. Strope at 376-9767.

****

DOE/EA-0915 *Waste Tank Safety Program, Hanford Site, Richland, Washington*, February 1994.

Background: This EA proposed a programmatic NEPA document to cover waste tank safety activities in the Hanford Site tank farms. The DOE determined to actively resolve safety issues associated with the underground storage tanks at the Hanford Site. Specific safety issues associated with these tanks included:

- Flammable gas generation and episodic release,
- Ferrocyanide-containing waste.
- Floating organic solvent layer in Tank 241-C-103,
- Nuclear criticality,
- Toxic vapors,
- Infrastructure upgrades,
- Interim stabilization of SSTs.

In addition, knowledge of the waste tank contents was incomplete and additional characterization was called for in the Tri-Party Agreement.

FONSI: The FONSI was approved February 25, 1994.

The proposed actions described in the FONSI includes the following:

- Installation, operation, and removal of in-tank monitoring equipment.
- Characterization of the floating organic solvent layer in Tank 241-C-103, and its subsequent removal.
- Sampling and characterization of vapors from suspect tanks. Ventilation system enhancements and minor modifications to mitigate noxious vapors and toxic vapor emissions also would be allowed.

- Modernization of facilities, improvements in plant instrumentation and data collection systems, and minor modifications to ventilation systems infrastructure upgrades, as required.

- Removal of the pumpable liquid in 43 SSTs to minimize the impact from potential future tank leaks to support interim stabilization of the tanks.

Current Status: The FONSI was approved February 1994. Various activities (e.g., camera and liquid-level monitor installation) have been done under this NEPA coverage in the Tank Farms. This is a programmatic Tank Farm EA that provides NEPA coverage for Tank Farm activities on an ongoing basis.

For more information, contact M. T. Jansky at 376-3854.

****

DOE/EA-0921* *Proposed Relocation and Resumption of DOE Radon Research Program in the 300 Area*, October 1994.

Background: This EA proposed the relocation and resumption of a DOE radon research program, relocating the DOE-owned radon generators from Battelle-owned Life Sciences Laboratory II (LSL-II), Richland North Area, to DOE-owned Life Sciences Laboratory I (LSL-I, also known as the 331 Building), 300 Area, Hanford Site.

DOE has identified a need to continue to provide a controlled source of radon-222 for use in physical and biological research. The radon generators were located in the Life Sciences Laboratory II, which is privately owned by Battelle Memorial Institute. The radon generating equipment is owned by the DOE's Pacific Northwest Laboratory, operated by Battelle, Pacific Northwest Division. The need for relocating the radon generators to the LSL-I facility in the 300 Area was to preclude occurrence of an accident, however unlikely, where a spill of radium-chloride solutions would enter the LSL-II floor drains and contaminate the City of Richland sewer system. Although such an accident would have negligible health impacts, it could result in unnecessary public concern and high clean-up costs.

Radon generators at the Pacific Northwest Laboratory (PNL) are a core resource of the overall DOE Radon Research Program and were administratively controlled within the "Radon Hazards in Homes" project. This project primarily focused on radon exposures of animals and addressed the major biologic effects and factors that influence risks of indoor radon exposures.

FONSI: The FONSI was approved on October 19, 1994.

The proposed action addressed in the FONSI is to relocate DOE-owned radon generators from Battelle-owned LSL-II, to DOE-owned LSL-I in the 300 Area, Hanford Site by:

- Remodel of four presently unused rooms in LSL-I,
- Fabrication and installation of a radon progeny hold-up ventilation exhaust system,
- Installation of exposure chambers,
- Removal of the radon-222 generators from LSL-II,
- Transportation of the generators to LSL-I,
- Installation of the generators and connection to the hold-up system,
- Decontamination of present LSL-II radon exposure facilities, if necessary,
- Resumption of physical and biological research in LSL-I.

Current Status: As of September 1995, the proposed activities in the FONSI are underway in Building 333. The anticipated work completion date in toward the end of calendar year (CY) 1995.

For more information, contact J. E. Sall, PNL, 375-2147.

****

DOE/EA-0933* *Tank 241-C-106 Past-Practice Sluicing Waste Retrieval, Hanford Site, Richland, Washington*, February 1995.

Background: This EA proposed to sluice the high-heat waste from Tank 241-C-106 to a double shell tank through one of two proposed double encased (pipe-in-pipe design), bermed lines. The DOE has identified a need to take this action to eliminate safety concerns with the storage of high heat waste in Tank 241-C-106 (Tank C-106), and demonstrate a tank waste retrieval technology. The system would be a closed loop, continuous sluicing process. The scope of the project is to remove 75 percent, at a minimum, of the high heat waste.

In November 1990, Public Law 101-510, Section 3137, "Safety Measures for Waste Tanks at Hanford Nuclear Reservation" was enacted, which authorized that DOE develop plans for response to safety issues associated with the waste storage tanks at the Hanford Site. The progress of implementation for these plans will be reported the U.S. Congress. In the resulting "Status Report on Resolution of Waste Tank

Safety Issues at the Hanford Site," Tank C-106 is identified as a high heat tank and one of the "Priority 1" safety issues at the Hanford Site.

Past practice of sluicing underground storage tanks (UST) involves introducing a high-volume, low-pressure stream of liquid to mobilize UST sludge waste prior to pumping the tank contents.

Tank C-106 is located in the 200 East Area. It has a 31 centimeter thick dished bottom, and a useable waste depth of approximately 4.8 meters at the sidewall and is a SST. The waste in Tank C-106 consists of 746,000 liters of sludge which is stratified into two layers. The top layer consists of 655,000 liters of sludge, containing a sufficient amount of strontium to be considered high-heat waste which generates approximately 32kW of heat. The bottom layer consists of 91,000 liters of low heat producing hardened material.

FONSI: The FONSI was approved February 17, 1995.

The proposed action in the FONSI is as follows:

- Waste retrieval operation will involve introducing a high volume, low pressure stream of liquid through sluicing nozzles to mobilize the sludge waste in Tank C-106 and prepare it for pumping.

- One sluicing nozzle will operate in the existing sluice pit, while the other will operate in the existing pump pit, if needed. Only one sluicer will operate at any one time.

- A new submersible pump will be installed in Tank C-106 to transfer the slurry to Tank AY-102.

- Remove some of the existing equipment in the pump and sluice pits of Tank C-106 will be removed and stored on the Hanford Site for subsequent treatment and disposal. Clean and apply paint or fiber coating to the inside surfaces of the pits, as appropriate.

- Supernatant will be pumped from Tank AY-102 to allow for sufficient space for the waste transfer from Tank C-106.

- Supernatant from Tank AY-101, or other appropriate sluicing fluid, will be pumped to Tank AY-102 to be used as the initial sluicing agent.

- A new HEPA filtration system will be added to Tank C-106 to minimize releases to the atmosphere. Also, install a recirculating air system will be installed to control the temperature and humidity of the Tank C-106 vapor space during sluicing.

- Additional instrumentation will be provided in both tanks and in the transfer lines between the tanks.

- A double-wide trailer outside of the 241-C Tank Farm will serve to house centralized monitoring and control instrumentation.

- Support services in the form of raw water, sanitary water, electrical power, telecommunications, and hoisting hardware will be provided

Current Status: The sluicing system design is in progress. Some of the long lead order items have been ordered. The scheduled completion for this project is 1997. For more information, contact J. P. Harris III on 372-1237.

****

DOE/EA-0942 *Return of Isotope Capsules to the Waste Encapsulation and Storage Facility, Hanford Site, Richland, Washington*, May 1994.

Background: This EA proposed to return isotope capsules to the waste encapsulation and storage facility on the Hanford Site. Historically, DOE has shipped radioactive isotope capsules, containing cesium-137 and strontium-90, to other DOE-controlled sites, as well as commercial facilities. Because of uncertainty regarding the failure of one capsule in a commercial facility (Decator, Georgia), DOE has determined that it needs to return leased capsules from the IOTECH, Incorporated (Northglenn, Colorado); Pacific Northwest Laboratory (Richland, Washington); and Applied Radiant Energy Company (Lynchburg, Virginia), to the Waste Encapsulation and Storage Facility (WESF) at the Hanford Site.

FONSI: The FONSI was approved May 25, 1994.

The proposed action described in the FONSI required remote physical testing of the capsules at their present site to ensure capsule integrity and appropriate handling. The capsules then would be packaged according to DOE and NRC guidelines, secured to truck trailers, and transported (according to DOE and U.S. Department of Transportation [DOT] procedures) to the WESF.

Current Status: Cesium capsule shipments have been initiated. All capsules are expected to be returned to the WESF by October 1995.

For more information, contact M. T. Jansky at 376-3854.

****

DOE/EA-0944* *222-S Radioactive Liquid Waste Line Replacement and 219-S Secondary Containment Upgrade, Hanford Site, Richland, Washington.* January 1995

Background: This EA proposed to replace the 222-S radioactive liquid waste line and 219-S facility secondary containment system that transfers liquid waste to the 241-SY tank farm. DOE has identified a need to take this action in order to:

- Bring the 222-S Laboratory (222-S) radioactive liquid waste lines into compliance with existing secondary containment and leak detection requirements specified in Washington Administrative Code (WAC) 173-303.
- Reduce potential risks to the environment and to worker safety.
- Reduce the risk of laboratory shutdown due to failure of the waste system.
- Upgrade the 219-S Waste Handling Facility (219-S).

222-S was built in 1951 to support the 202-S Reduction-Oxidation (REDOX) Plant and the 200 Area tank farms. The laboratory is now used to perform analytical services on radioactive samples in support of the Tank Waste Remediation System (TWRS) Program and Hanford Site environmental restoration programs. Activities conducted at 222-S include decontamination of analytical processing and support equipment and disposal of non-archived radioactive samples. These activities generated low-level liquid mixed waste.

The waste historically was transferred from 219-S through a buried pipeline to the 241-SY Tank Farm in the 200 West Area for storage. However, the current practice is to transfer waste via tanker truck from 219-S to a tank farm in the 200 East Area because of concerns about the integrity of the existing line between 219-S and the 241-SY Tank Farm. The Washington State Department of Ecology is now allowing this to be done on an interim basis under a Part A dangerous waste permit.

222-S was expected to remain in use for at least the next 30 years to serve the Hanford Site environmental cleanup mission. Failure of the drain and transfer piping systems or any of the 219-S tanks would result in shut down of the laboratory.

FONSI: The FONSI was approved January 24, 1995.

The FONSI included the following actions:

- Replace drain piping in the 222-S service tunnels, the piping in the underground concrete encased pipe trenches between the 222-S service tunnels and 219-S, and the waste transfer lines between 219-S and the receiving tank farm.

- Upgrade 219-S to meet secondary containment, leak detection, and seismic design requirements.

- Repair and recoat the cell compartments with a chemically resistant sealer and lined with stainless steel to provide secondary containment and leak detection.

Current Status: The proposed action is being performed in two phases. The first phase was to install a new transfer line from the lab to the tank farms. This work is expected to be completed in December 1995. The second phase is to renovate the lab piping and cell interiors. The design is complete and construction is anticipated to begin January 1996 and completed in March 1997.

For more information, contact J. J. Beyer on 372-3913.

****

DOE/EA-0959 *Resiting, Construction and Operation of the Environmental and Molecular Sciences Laboratory at the Hanford Site, Richland, Washington*, July 1994.

Background: The EA proposed to re-site, construct, and operate the Environmental and Molecular Sciences Laboratory. DOE has identified a need for additional laboratory services at the Hanford Site to provide, at one location, the combined office and laboratory facilities necessary to conduct research directed toward environmental restoration programs carried out by DOE at the Hanford Site and other DOE sites. In response, the EA analyzed the construction and operation of the EMSL to be located north of the city of Richland. An EA was originally written and approved in September 1992 to construct the laboratory on a site closer to the Columbia River. On September 17, 1992, DOE issued a FONSI for the construction and operation of the EMSL on a site overlooking the Columbia River at the south end of the 300 Area at DOE's Hanford Site. On the second day of construction, April 12, 1994, construction crews uncovered human remains thought to be those of Native Americans. DOE immediately halted construction and proposed, consistent with the wishes of local Indian tribes and with the spirit of the Native American Graves Protection and Repatriation Act and the American Indian Religious Freedom Act, to relocate the site of the facility. This EA, therefore represents the estimated environmental impacts of the construction and operation of the EMSL on a new site.

FONSI: The FONSI was approved July 7, 1994.

The FONSI addressed construction and operation of a 200,000-square foot facility, which would house laboratories, offices, research support shops, a lecture hall, conference rooms, a library, and other miscellaneous functions. The FONSI also allows for infrastructure upgrades in the area to support the operation of the laboratory.

Current Status: As of September 1995, construction of the laboratory is underway.

For more information, contact E. B. Moore, Jr., at 372-4213.

****

DOE/EA-0978* *Sludge Stabilization at the Plutonium Finishing Plant, Hanford Site, Richland, Washington*, October 1994.

Background: This EA proposed to stabilize the sludges in the glove boxes as an interim action pending completion of the PFP EIS analysis and ROD concerning the proposed cleanout of the PFP and stabilization of the remaining materials within the PFP. This is a result of a need that DOE has identified to reduce worker exposure to radiation at PFP.

The PFP Plant workers account for nearly half of all Hanford Site radiation worker exposure. One of the largest sources of worker exposure that can be decreased is the constant need for proximity of workers to unshielded gloveboxes containing sludges in order to monitor the conditions of sludge containers, to inventory material, and to perform routine housekeeping and preventative maintenance operations.

In July 1993, an EA was initiated to review operation of the major PFP processes to stabilize most of the sludges along with process solutions and other scrap materials. However, DOE decided to increase the level of NEPA review to that of an EIS. The project scope was expanded to review reasonable alternatives for the stabilization of all plutonium bearing materials, cleanout of the PFP facilities (except for storage) to a state ready for decontamination and decommissioning, and/or potential future uses.

FONSI: The FONSI was approved October 19, 1994.

The proposed action described in the FONSI is as follows:

- Stabilize the chemically reactive, plutonium-bearing sludges within the process glove boxes in the PFP Plant, and store the stabilized sludges in shielded storage vaults within PFP.

- Stabilize the sludges by heating them to a range of approximately 500° to 1,000°C and convert them to plutonium oxide. The other chemicals not driven off by the heat would remain as stable impurities in the resulting solid. The solid plutonium oxide would be stored in sealed containers in the vaults at PFP. There are approximately 300 containers of reactive scrap sludges which require stabilization. Sludge stabilization is expected to take about 14 months.

The project is expected to be completed by the end of FY 1997.

Current Status: For more information, contact E. V. Weiss on 372-1109 or C. H. Eccleston on 376-9364.

****

DOE/EA-0980* *300 Area Process Sewer Piping Upgrade and 300 Area Treated Effluent Disposal Facility Discharge to the City of Richland Sewage System, Hanford Site, Richland, Washington,* May 1995.

Background: This EA proposed to upgrade the 300 Area process sewer piping system and connect the treated effluent disposal facility discharge to the City of Richland sewage system. This addressed the DOE needs to:

- Take action to reduce, or where appropriate, eliminate untreated liquid effluents discharged to the soil in the 300 Area of the Hanford Site.
- Reduce anticipated operating costs at the new 300 Area Treated Effluent Disposal Facility (TEDF) which became operational December 1994.
- Improve the questionable integrity of the old piping in the existing 300 Area Process Sewer System (e.g., effluents potentially could be entering the soil from leaking pipes).

The 300 Area Process Sewer System discharges effluents to the TEDF collection sump and lift station. The construction and operations of the TEDF was addressed in a previously approved environmental assessment (*Hanford Environmental Compliance Project, DOE/EA-0383*). The process waste liquid effluent was well below the DOE requirements for radiological secondary containment, and is not considered a RCRA hazardous waste or a *State of Washington Hazardous Waste Management Act* dangerous waste.

FONSI: The FONSI was issued May 25, 1995.

The proposed action described in the FONSI is as follows:

- Upgrade the existing 300 Area Process Sewer System through the construction and operation of a new collection system.
- Construct and operate a combined gravity, vacuum, and pressurized collection system from the TEDF. Design the system for extra capacity of about 25 percent for connection of additional buildings as necessary and for future growth. After processing the waste, either pump the effluent to the tie line for transfer to the City of Richland system or directly to the Columbia River. This action will provide two options for discharge of the 300 Area process effluent.

- Connect the new collection system to about 36 of the existing buildings that still require process sewer drains.
- Reconstruct all asphalt or concrete paving in roads, walkways, and parking lots subsequent to excavating for collection stations and trenching for the new pipe.
- Incorporate existing sewer lines in the new system rather than being replaced if found to be in good condition and uncontaminated.
- Provide for the construction of a buried discharge line from the TEDF to Lift Station Number One of the new 300 Area Sanitary Sewer Line in the event a decision is made to connect the TEDF to the City of Richland sewage system. This decision is contingent on an agreement with the City of Richland.

Current Status: Construction of the proposed actions is ongoing and expected to be complete in May 1996. There are no plans or projects to connect the TEDF discharge to the City of Richland treatment plant in North Richland. Currently, the TEDF discharge is to the Columbia River.

For more information, contact H. E. Wellsfry on 372-0812.

****

DOE/EA-0981D* *W-113/-112 Solid Waste Retrieval Phase I and Enhanced Radioactive and Mixed Waste Storage Phase V*, draft.

Background: This EA proposes to construct and operate the following:

- Solid Waste Retrieval Complex,
- Enhanced Radioactive Mixed Waste Storage Facility,
- Central Waste Support Complex,
- Associated infrastructure upgrades.

These facilities would be located in the 200 West Area to support the Solid Waste Operations Complex operation.

This proposed action would address DOE's need to:

- Retrieve TRU waste
- Provide storage capacity for retrieved and newly generated TRU

- Upgrade the infrastructure network in the 200 West Area to enhance operational efficiencies and reduce the cost of operating the existing Solid Waste Operations Complex.

FONSI: The EA has not been finalized as of September, 1995.

Current Status: The EA has been processed through the RL Review Panel May 26, 1995. The EA was sent to the States and tribes for preapproval review on June 9, 1995. The comments have been received by DOE and responses to the comments are being prepared.

For additional information, contact G. T. Wells on 376-1423.

****

DOE/EA-0982D* *Special Case Material, Construction and Operation of a Storage Unit*, draft.

Background: This EA proposes to construct and operate a Special Case Material storage unit. The proposed high-activity remote-handled (RH) waste storage facility would be a storage system consisting of such components as:

- Solid waste containers,
- Shipping casks,
- Transfer system,
- Storage modules similar to that used by the commercial nuclear power industry.

DOE has identified a need to centralize storage of RH radioactive waste. Also, RH waste needs to be relocated from the 300 Area Radiochemical Engineering Cells (REC) because the 324 Building B-Cell's High-Efficiency Particulate Air filtration system could fail in the event of a seismic event. This could create a radiological release above the DOE offsite limit of 100 millirem effective dose equivalent to the general public.

The proposed action would provide a centralized RH storage facility with monitoring and retrievability capabilities, in Hanford Site's solid waste management area located in the 200 West Area. It will also include an initial shipment of approximately 592 cubic feet of RH waste from the 300 Area REC, 324 Building B-Cell.

FONSI: The EA has not been finalized as of September 1995.

Current Status: The draft EA is planned for issuance in early FY 96 to the State of Washington, Tribes, and USFWS for comments in August 1995. Comments have been received by DOE and responses to the comments are being prepared.

For more information, contact G. T. Wells on 376-1423.

****

DOE/EA-0983* *Inert/Demolition Waste Landfill (Pit 9), Hanford Site, Richland, Washington,* May 1995.

Background: This EA proposed to construct a waste landfill (Pit 9) to accumulate inert and demolition waste for the Hanford Site. The DOE has identified a need for a convenient and economical disposal capacity of these types of waste to support the demolition activities planned for the southern areas of the Hanford Site.

The current demolition waste landfill, Pit 10, located approximately 25 meters west of Route 4S, will reach full capacity in 1995. The projected demolition activities on the Hanford Site will continue for up to 20 years. As a result, a replacement demolition landfill is required in the near term. Therefore, DOE proposed to use an existing alluvial gravel pit, Pit 9, as a new inert and demolition waste landfill for the Hanford Site. Pit 9 is located approximately 3 kilometers north of the 300 Area, in the 600 Area of the Hanford Site. It would be converted to use as an inert/demolition waste landfill by installing a lockable access gate at the entrance, and a fenced barrier around the entire landfill area and appropriately posted. No other physical alterations in the Pit 9 area would be necessary.

This action would support the disposal phase of various infrastructure demolition projects in the southern areas of the Hanford Site. These demolition projects would produce waste consisting of concrete, brick, incidental wood, used asphalt, and steel.

Due to the large size of Pit 9, current disposal projections estimate that it would be available for the noted types of waste for 20 years.

FONSI: The FONSI was approved May 15, 1995.

The proposed action is described in the FONSI as follows:

An existing alluvial gravel pit, Pit 9 will be used, as a new inert and demolition waste landfill. It will support the disposal of various infrastructure demolition projects in the southern areas of the Hanford Site.

Controls restricting the disposal of inert and demolition waste types will be strictly enforced. Workers at the demolition sites will segregate the various waste types according to DOE contractor procedures administrative controls to ensure all

hazardous, dangerous, radioactive, asbestos, and liquid waste are separated and not included in the inert and demolition waste to be placed into dump trucks bound for the proposed inert/demolition waste landfill.

When Pit 9 reaches its full capacity, or is no longer needed, it will be covered with a minimum of 1 foot of soil, any voids will be filled to maintain an aesthetic appearance, and the site revegetated with native species derived from the Hanford Site to assist in restoration success, soil stabilization, and create habitat with wildlife value, where appropriate.

Current Status: Pit 9 has been opened and operational since approximately July 1995.

For more information, contact K. D. Johnson on 376-0845 or K. R. Welsch on 376-4373.

****

DOE/EA-0984* *Deactivation of the N Reactor Facilities*, May 1995.

Background: This EA proposed to place the N Reactor facilities in a radiologically, environmentally, and structurally stable condition that would require minimal surveillance and maintenance until Decontaminating and Decommissioning of the facility is initiated. Approximately 80 facilities would be involved. Activities under the proposed action would be conducted in two phases; a three-year deactivation phase followed by a surveillance and maintenance phase of up to 21 years.

DOE has identified the need to place the N Reactor facilities in a condition that enhances worker safety and environmental protection and reduces the costs of surveillance and maintenance in the interim.

The current conditions at the N Reactor facilities, if left unmitigated, present a potential threat of a contamination release to the environment or radiation exposure to workers who maintain and monitor the facilities. The current conditions at the N Reactor facilities are also likely to require increased surveillance and maintenance costs in the future. These conditions are a result of past operation of the N Reactor facilities and include the following:

- Radiologically contaminated water, sediment, and hardware in the 105-N Fuel Storage Basin, and contaminated water in the 1300-N Emergency Dump Basin.
- Small quantities of radioactive fuel fragments and a potential lithium target or target fragments that might be present in the fuel storage basin.
- Hazardous substances, including asbestos, transformer oils, lead shielding, contaminated resins, and various chemicals contained in tanks and buildings.

- Radioactive liquids in piping systems.
- Loose surface contamination and unstabilized radiation zones in buildings.
- Unsealed penetrations between building interiors and the environment.
- Potentially dangerous structural conditions such as damaged roofs.

FONSI: The FONSI was approved May 1, 1995.

The proposed action described in the FONSI includes the following:

- Deactivate the N Reactor facilities to remove conditions that present a potential threat to human health and the environment and to reduce future surveillance and maintenance requirements.
- Provide surveillance and maintenance after deactivation. These activities will continue until N Reactor and its ancillary facilities are all decommissioned.
- Specific activities included in the proposed action:
  - Existing applicable equipment will be restarted to support deactivation activities.
  - Equipment fluids, hazardous substances and unattached equipment and materials will be removed and characterized, packaged, and transported to the 200 Areas for use, recycling, storage or disposal as waste.
  - Basins and tanks will be drained, and contaminated water and residuals will be removed and transported to the 200 Areas for disposal.
  - The 105N Fuel Storage Basin will be inspected for irradiated fuel fragments, which will be removed, packaged and stored in the basin awaiting future decisions regarding interim storage.
  - Contaminated water from the 105N Fuel Storage Basin and the Emergency Dump Basin will be removed, pretreated as necessary in a facility, specially constructed in the 100N Area, then transported to the permitted Effluent Treatment Facility in the 200 Area for additional treatment and disposal to the soil.
  - Contaminated sediment, hardware, pieces of lithium targets, and irradiated fuel spacers will be removed, packaged as necessary, and transported to the 200 Areas for storage or disposal.

- Radiation zones will be decontaminated and removed or stabilized to fix loose contaminations.

- Support systems, such as, heating, ventilation, and air conditioning, water and monitors that are not required for future environmental compliance or personnel safety will be de-energized.

- Structural repairs will be made as necessary for future surveillance and maintenance needs.

- Building penetrations will be sealed to prevent entry of animals, and personnel access controls will be installed.

- Routine maintenance, including inspections, and vermin and weed control will continue.

Current Status: The deactivation action at the N Reactor has started and is underway with the work expected to be completed in approximately September 1997. The ongoing deactivation work to date includes removal of the basin spacers from the silos.

For more information, contact E. T. Coenenberg (BHI) on 372-9451.

****

DOE/EA-0985* *Relocation and Storage of TRIGA Reactor Irradiated Fuel*, August 1995.

Background: This EA proposed to relocate fuel assemblies from the Mark I TRIGA Reactor 308 Building storage pool. Relocation of these fuel assemblies would allow the shutdown of the 308 Building, which is no longer needed for the fabrication of fuel assemblies and test assemblies for the FFTF. Savings of $500,00 per year were estimated to result from shutdown.

The Mark I TRIGA Reactor was used for research and development, and as a neutron source for the Neutron Radiography Facility which supported the fabrication of removable core components and test assemblies for use in the FFTF. Removal of the fuel assemblies stored in the TRIGA Reactor storage pool is the last action necessary to complete the shutdown of the 308 Building.

The irradiated TRIGA fuel assemblies would be packaged in six TRIGA casks and two DOT Specification 6M containers for transportation and storage in the Interim Storage Area that will be constructed in the 400 Area.

The existing three unirradiated fuel assemblies would be transported to another TRIGA Reactor in Denver, Colorado. However, if the three fuel assemblies could not be transferred to Denver, they may be stored at the Plutonium Finishing Plant in

the 200 West Area until they can be transferred to another reactor. All, or some, or the irradiated fuel assemblies may be shipped to other TRIGA Reactors before or after the relocation of the fuel assemblies has occurred. The scope of this EA does not cover the relocation of any irradiated fuel assemblies to other reactors.

During storage, the fuel assemblies in the TRIGA casks and DOE-6M containers would be managed as spent nuclear fuel.

FONSI: The FONSI was issued August 10, 1995.

Current Status: The neutron sources have been removed from the reactor pool and are being stored in shipping drums. In October 1995, the 99 irradiated fuel elements will be removed. Completion of the removal of irradiated fuel elements is expected to be completed in November 1995. They will then be shipped to the 400 Area fuel storage area in December 1995. On September 19, 1995, the unirradiated fuel elements were removed from the pool.

For more information, contact J. O. Dittmer on 376-3597 or B. F. Archer on 376-4779.

****

DOE/EA-0986D* *Project L-116, 200 Area Sanitary Sewer System*, draft.

Background: This EA proposes to replace the existing sanitary sewage septic systems in the 200 Area Plateau with two modern sanitary sewage collection systems and evaporative lagoon systems for treatment and disposal. The DOE has identified a need for this proposed action to alleviate failing and overloaded sewage treatment facilities in the 200 Areas of the Hanford Site and restrain the flow of effluent to the vadose zone.

Approximately 50 sanitary sewage septic systems presently serve facilities on the 200 Area Plateau. Many of these 30- to 40-year-old systems are failing or are overloaded. Currently, about 400,000 gallons of sewage per month is being transported from failed 200 Area septic systems to the 100 N Area sanitary sewer lagoon. All of these septic systems discharge septic system effluent into the vadose zone. This discharge contributes to the "mounding" of ground water below the 200 Area Plateau, which drives existing below grade contamination plumes toward the Columbia River.

One sewage collection and lagoon system would serve the 200 West Area and surroundings and another would serve the 200 East Area and surroundings. The proposed sewage treatment system would replace about 50 septic systems presently serving facilities in the 200 Area Plateau. These systems would eliminate most liquid discharges to the vadose zone. Sewage dump stations in each area would allow

sewage from failed septic systems in other areas to be transported to the proposed lagoon system for treatment and disposal.

FONSI: The EA has not been finalized as of September, 1995.

Current Status: The draft EA has been sent to the States, Tribes, and USFWS for review. Comments have been received and are being considered.

For more information, contact M. B. Strope on 376-9767.

****

DOE/EA-0987* *Disposition of Alkali Metal Test Loops, Hanford Site, Richland, Washington*, May 1995.

Background: This EA proposed to package the metallic sodium and sodium-potassium eutectic material, and associated loop hardware for shipment offsite for recycle, reuse and/or disposal. The sodium test loops are located in the 200 and 300 Areas on the Hanford Site. Additionally, any or all loops may be packaged appropriately, and transferred offsite for reuse. Residual sodium wetted piping and associated equipment also would be packaged for recycle disposal, as appropriate. Ancillary tankage would be cleaned in situ to remove residual sodium for potential reuse/disposal. Consideration would be given to allow an offsite entity to perform all, or part, of the proposed action.

The proposed action is a result of DOE identification of a need to disposition nonradioactive alkali metal test loops located at the Hanford Site. The disposition of the alkali metals and test loops is required because they no longer have a useful purpose.

All facilities are monitored in accordance with DOE Orders and contractor procedures and guidelines, with appropriate surveillance documentation submitted to the DOE.

In Calendar Year 1993, the sodium was placed on the Federal Excessing List to allow procurement by the private sector. Numerous potential buyers have placed firm bids for procurement of the nonradioactive sodium inventory over a multi-year period. Therefore, the sodium and sodium-potassium eutectic alloy contained within the test loops are being managed as product, pending repackaging for shipment offsite to the private sector.

The facilities that store the product are not associated with the Hanford Site's Fast Flux Test Facility, a sodium-cooled research reactor which was directed to transition to a radiologically and industrially safe shutdown condition beginning in December 15, 1993. The shutdown of the FFTF is not connected with these legacy facilities, and was addressed in separate, appropriate NEPA documentation.

FONSI: The FONSI was approved May 1, 1995.

The proposed action is described in the FONSI as follows:

- Appropriately package the metallic sodium and sodium-potassium eutectic material, and associated loop hardware for shipment offsite for recycle, reuse and/or disposal. Additionally, any or all loops may be packaged appropriately, and transferred offsite for reuse.
- Residual sodium wetted piping and associated equipment will be packaged for recycle or disposal, as appropriate.
- Ancillary tankage will be cleaned, in situ, to remove residual sodium, to the extent practicable, for potential reuse/disposal.
- Consideration will be given to allow an offsite entity to perform all, or part, of the proposed action.

Current Status: As of September 1995, the proposed activities are proceeding as scheduled. The first of five sodium test loops have been shipped. The test loops are being sent to L.M. Manufacturing under a Cooperative Research and Development Agreement. Phase two of the proposed action is to drain the sodium tanks and ship the sodium to a offsite buyer at a later date.

The completion date for shipping the test loops is anticipated to be CY 2000. The completion of the project is expected to be the year 2001.

For more information, contact W. F. Brehm on 376-9779 or M. T. Jansky on 376-3854.

****

DOE/EA-0988* *Transfer of Plutonium-Uranium Extraction Plant and N Reactor Irradiated Fuel for Storage at the 105-KE and 105-KW Fuel Storage Basins*, July 1995.

Background: The EA proposed to place the irradiated fuel located at the PUREX Plant and N Reactor facilities into rail transport cask cars and move the cask cars to the 105-KE and 105-KW Basins in the 100 K Area of the Hanford Site. The proposed action would also include fuel handling and fuel placement at the 105-KE and 105-KW Basins. The fuel would be stored along with the other irradiated fuel now being stored in these facilities.

This is a result of a need to remove irradiated fuel from the PUREX Plant and the N Reactor in order to support the deactivation and stabilization of the facilities in

preparation for D&D and to reduce the cost of maintaining the facilities prior to D&D.

In December 1992, DOE directed the shutdown and deactivation of the PUREX Plant because it is no longer needed to support the nation's weapons grade plutonium production. Some irradiated fuel that was not processed remained in the PUREX Plant. Also, the N Reactor still had some zircalloy clad (ZC) irradiated material that was still in the N Reactor after July 1991 when DOE decided to proceed with activities leading to the ultimate D&D of the facility.

FONSI: The FONSI was approved on July 12, 1995.

The proposed action is described in the FONSI as follows:

- Approximately 3.9 metric tons of unprocessed irradiated fuel will be transported, by rail, from the PUREX Plant and the 105 N Reactor to the 105-KE and 105-KW fuel storage basins in the 100 K Area.

- The fuel will be placed in storage at the K Basins, along with fuel presently stored, and will eventually be dispositioned in the same manner as the other existing irradiated fuel inventory stored in the K Basins.

- A maximum of three railcar shipments of fuel will be made, two shipments from the PUREX Plant and one from N Reactor. The K Basins operational limits on allowable packaging and uranium enrichment require that the PUREX ZC fuel be transported to the 105-KW Basin. The PUREX AC fuel elements could be shipped to either the 105-KE or 105-KW Basin where the fuel will be unloaded, packaged into canisters, and placed with the other fuel already stored in the basin.

- The canisters of ZC fuel from the N Reactor will be transferred to 105-KW Basin, unloaded, and stored with the existing fuel.

Current Status: As of September 1995, the fuel located in the PUREX plant is packaged and ready for shipment. The anticipated shipping date of the fuel from the PUREX plant to the K Basin is September 28, 1995.

For more information, contact M. B. Enghusen on 373-3837 or B. F. Archer on 376-4779.

****

DOE/EA-0992D* *Decommissioning of Building 233-S, Plutonium Concentration Facility*, draft.

Background: This EA proposes a phased approach to decommissioning the Plutonium Concentration Facility, Building 233-S.

- Phase I: decontaminate the structures and associated equipment.
- Phase II: dismantle the complex.

The 233-S Complex began operation in 1955 to concentrate plutonium nitrate solutions from the REDOX Plant. Using an ion exchange process, the solutions passed through a resin column where the plutonium remained on the resin and impurities passed out of the system. The plutonium was then chemically removed from the resin, packaged, and shipped to the PFP for further processing. In 1962, the operation was expanded to include neptunium nitrate solutions received from REDOX.

Through 1990, decontamination activities were periodically performed to prevent spreading of contamination from the process hoods. All identified concentrated hazardous chemicals have been removed from the 233-S Building, although there may be some residual liquid in the process lines. Hazardous chemicals and asbestos containing materials have not been identified in the building in more than very minor quantities. Decontamination plans would address the presence of these substances.

Phase I activities at the 233-S Complex would consist of removing radiological and hazardous chemical substances, equipment and materials, and asbestos insulation.

The continuous air monitoring systems within the process area of the facility would continue to operate during dismantlement operations, to alert workers to the presence of airborne plutonium.

Sampling would be implemented to identify hazardous materials present in process piping and vessels.

After removal of the buildings and foundations, a vadose zone survey of the project site would be performed to determine the extent of soil contamination. Phase II activities would be completed by grading the site to facilitate precipitation runoff and covering the area with gravel to stabilize the site.

This EA originally included D&D of building 232-Z. D&D of 232-Z has been broken out into a separate EA. See DOE/EA-1098D.

FONSI: The EA is in preparation by BHI.

Current Status: For more information, contact K. A. Gano on 372-9316.

****

DOE/EA-0993* *Shutdown of Fast Flux Test Facility, Hanford Site, Richland, Washington*, May 1995.

Background: This EA proposed to permanently shutdown the FFTF by:

- Removing fuel,
- Draining and de-energizing the systems,
- Removing the stored radioactive and hazardous materials,
- Performing other actions to place the facility in a radiologically and industrially safe shutdown state.

DOE has identified a need to place the Hanford Site's FFTF in a radiologically and industrially safe shutdown condition, suitable for a long term surveillance and maintenance phase prior to final D&D. The need is based on a determination that no combination of missions for the FFTF has a reasonable probability of financial viability over the next 10 years. Disposition of the associated radioactive and hazardous materials would be necessary to place the facility in a safe shutdown condition with reduced risk to plant workers, the public, and the environment, while achieving the desired cost savings.

In December, 1993, DOE determined that no combination of missions for the FFTF has a reasonable probability of financial viability over the next 10 years. Therefore, shutdown of the facility was ordered with a goal to accomplish the shutdown effort in approximately five years. The *Fast Flux Test Facility Transition Project Plan, WHC-SD-FF-SSP-004*, provides additional details regarding overall shutdown activities and requirements.

Appropriate surveillance and maintenance would be performed to prevent unacceptable risks to persons or the environment until final D&D of the facility is completed.

FONSI: The FONSI was approved May 1, 1995.

The proposed actions for permanently shutting down the FFTF are described in the FONSI as follows:

- Remove the fuel, drain and de-energize the systems, remove the stored radioactive and hazardous materials, and perform other actions to place the facility in a radiologically and industrially safe shutdown state.

- Perform appropriate surveillance and maintenance to prevent unacceptable risks to persons or to the environment.

- Defuel the reactor core to the Interim Decay Storage and the Fuel Storage Facility by use of standard FFTF refueling equipment and operating procedures. The fuel will be replaced with irradiated nonfuel core components; thirteen new nonfuel core components; and three new Simulated Core Assemblies that otherwise would have been excessed.

- Appropriately disposition two fuel assemblies that experienced a breach in the fuel cladding during irradiation, several fuel assemblies that are known gas leakers, and seven sodium-bonded metal fuel assemblies plus sodium-bonded pins which will require slightly different disposition.

- Maintain the metallic sodium in a molten state until the fuel assemblies can be removed from their respective storage locations and transferred to appropriate storage.

- Perform an appropriate excess evaluation of the bulk metallic sodium inventory to determine if alternative sponsors and/or uses are available.

- Maintain the residual sodium in the main portion of the FFTF's piping and equipment after the sodium and sodium potassium eutectic alloy systems with an inert gas atmosphere to prevent any chemical reactions during long term surveillance and maintenance.

- Appropriately package the solid and liquid effluents from the shutdown activities that contain radioactive and/or hazardous materials. Primary consideration will be given to transportation of waste to existing Hanford Site treatment, storage, and/or disposal (TSD) facilities. Offsite TSD facilities will also be considered, as appropriate.

Current Status: As of September 1995, the FFTF has been shutdown and deactivation activities are proceeding as scheduled.

For additional information, contact D. L. Nielsen on 376-9809 or M. T. Jansky on 376-3854.

****

DOE/EA-1005* *Disposition and Transportation of Surplus Radioactive Low Specific Activity Nitric Acid, Hanford Site, Richland, Washington*, May 1995.

Background: This EA proposed to transport approximately 183,000 gallons of Low Specific Activity (LSA) nitric acid currently stored at the Hanford Site in Richland,

Washington, to British Nuclear Fuel private limited company (BNF plc), located in Sellafield, England.

The proposed action resulted from a need DOE identified to disposition surplus nitric acid as part of deactivating the PUREX Plant, to reduce the risk to the environment, to reduce the cost of long term storage, and to assure regulatory compliance.

A specific result of cessation of PUREX Plant operations is that excess chemicals are available, including the approximately 183,000 gallons of slightly radioactively contaminated nitric acid. The material is stored in four storage tanks at the PUREX Plant. The average concentration of the nitric acid is approximately 10 moles per liter. The total quantity of plutonium in the nitric acid is less than 0.01 ounces. The total quantity of uranium is approximately 16,300 pounds. The fissile components of the nitric acid consist of the negligible inventory of plutonium$^{(238 \text{ and } 239)}$ and approximately 158 pounds of uranium^{235}.

As part of the BNF plc operations, the uranium contained in the LSA nitric acid would be recovered and converted to solid uranium trioxide. The DOE would retain title to an amount of the solid uranium trioxide that is equivalent to the amount recovered from the LSA nitric acid. The current plans are to return the solid uranium trioxide material to the Hanford Site for storage with the existing inventory pending final disposition. The small quantity of plutonium would not be recovered for retu to DOE, but would remain within the processing streams associated with routine BNF plc operations.

FONSI: The FONSI was approved May 15, 1995.

The proposed actions are described in the FONSI as follows:

- Transfer the nitric acid from its existing location in the PUREX Plant to transport containers designed and fabricated to appropriate specifications.

- Secure the containers on a truck trailer and radiological monitor by trained personnel using prescribed procedures and equipment prior to release.

- Inspect the containers and trailers prior to transport to ensure appropriate standards, specifications, and regulations, including U.S. Department of Transportation guidelines, and carrier security demands are met. Approximately 52 shipments from the Hanford Site to an east coast port will be required to transfer the entire inventory on nitric acid to BNF plc. Transport time from the Hanford Site to the east coast will be approximately four days for each shipment.

- Ship the nitric acid from any of three east coast ports (Portsmouth, Virginia; Baltimore, Maryland; and Newark, New York). The specific port for each shipment will depend on the carriers' shipping schedule.

- Recover the uranium contained in the nitric acid and convert it to solid uranium trioxide (BNF plc action). The DOE owned solid uranium trioxide will be transferred to suitable storage containers and transferred to interim storage in the BNF plc storage facility. Current plans are to return this material to the Hanford Site for storage with the existing inventory pending final disposition.

- Subsequent to removing the entire inventory of nitric acid from the PUREX Plant, stabilize the storage tanks (e.g., rinse and isolate) and place into a condition suitable for long term surveillance, pending decommissioning of the PUREX Plant. Rinse solutions will be transferred to existing waste management facilities at the Hanford Site for treatment, storage, and/or disposal.

- Return transport containers to the Hanford Site, decontaminate as necessary, and reuse or disposition, as appropriate.

Current Status: Shipments of the nitric acid from the PUREX Plant are underway and are expected to be completed by January 1996.

For more information, contact M. T. Jansky on 376-3854.

****

DOE/EA-1030* *Characterization of Stored Defense Production Spent Nuclear Fuel and Associated Materials at Hanford Site, Richland, Washington*, March 1995.

Background: This EA proposed to characterize stored defense production spent nuclear fuel and associated materials on the Hanford Site. DOE has identified a need for characterization activities that would establish a basis for determining the types of interim storage modes that would be compatible with the spent nuclear fuel material (SNFM) in its present condition, and the kind and extent of processing, if any, the SNFM would require to make it compatible with alternative storage modes.

Currently, 1,150 metric tons of uranium (MTU) of irradiated N Reactor fuel are stored in 3,666 open canisters in the 105-KE Basin and 958 MTU of N Reactor fuel are stored in 3,815 sealed canisters in the 105-KW Basin in the 100 K Area. Each basin also contains a small amount of irradiated Single Pass Reactor (SPR) fuel (0.1 MTU) in 105-KW and 0.4 MTU in 105-KE Basin. In addition there are 2.9 MTU of SPR and 0.5 MTU of N Reactor fuel stored in the PUREX Plant in the 200 East Area. The N Reactor fuel was discharged from the reactor between eight and 25 years ago. Most of the SPR fuel is residual material from the 105-KE and 105-KW and is over 20 years old. The total stored spent defense production nuclear fuel (SNF) amounts to about 2,110 MTU.

An estimated 12 percent of the fuel elements have cladding damage as a result of discharge and subsequent handling operations and 90 percent of the canisters are

estimated to contain at least one damaged fuel element. In addition, some fuel has been damaged as a result of corrosion during storage.

The need for characterization arises because:

- Some fuel, if it were to become bare and dry, might auto ignite releasing radioactive material to the atmosphere, thus, auto ignition conditions need to be determined.
- The condition of material in canisters in 105-KW Basin is unknown, but may contain some uranium hydride, a reactive corrosion product.
- Proceeding with either wet or dry storage concepts for SNFM in the 100 K Area Basins without the technical basis provided by characterization will not be prudent in terms of safety and environmental protection.

FONSI: The FONSI was approved March 13, 1995.

The proposed action is described in the FONSI as follows:

- Obtain samples of spent nuclear fuel and associated materials stored in the 100 K Area Basins.
- Transport the samples by truck in commercially available Nuclear Regulatory Commission licensed casks to the 327 Building in the 300 Area.
- Subject the samples to physical and chemical characterization.
- Develop a range of alternative fuel conditioning technologies based on the characterization results.
- Return unused sample portions to storage in the 100 K Area Basins.
- Dispose of characterization wastes in approved disposal sites in the 200 Areas.

Current Status: The spent nuclear fuel characterization proposed actions are proceeding as scheduled. Several fuel elements and samples of basin sludge have been transferred from the K Basins to the Hanford Site laboratories for characterization. Initial characterization results are expected by December 15, 1995. The scheduled completion date for the characterization activities is 1998.

For more information, contact L. A. Lawrence on 376-5543 or I. C. Nelson on 375-6813.

****

DOE/EA-1098D* *Decommissioning and Decontamination of Building 232-Z at the Hanford Site, Richland, Washington*, draft.

Background: None available as of September 1995.

FONSI: The EA is in preparation.

Current Status: Because of schedule changes regarding 232-Z, 233-S has been broken out as a separate EA. See DOE/EA-0992D.

The EA has been delayed because of new information about the plutonium inventory that indicated there was more there than originally expected. Recently, a Memorandum of Understanding (MOU) between EPA and DOE regarding D&D has been issued. The MOU allows DOE to perform D&D action under CERCLA regulatory authority as (usually) non-time-critical removal actions. A recent DOE Secretarial Policy on NEPA, states that stand-alone NEPA reviews on CERCLA actions will not be performed and therefore, an EA may not be required.

****

3.0 MISCELLANEOUS ENVIRONMENTAL ASSESSMENTS - HANFORD SITE

3.1 Numerical Listing of Misc. Hanford Site EAs

DOE/EA-0210D *Draft Environmental Assessment: Characterization of the Hanford Site Pursuant to the Nuclear Waste Policy Act of 1982, Richland, Washington*, February 1983.

This is a NWPA document. This EA was revised and became DOE/RW-0017(D).

****

DOE/RW-0017D *Draft Environmental Assessment: Reference Repository Location, Hanford Site, Richland, Washington*, December 1984.

This is a NWPA document; therefore, a FONSI was not required.

****

EIA/WPR/77-3 *Environmental Impact Assessment: Coring Well, Hanford Reservation, Richland, Washington*, March 1977.

A FONSI was not required because the EIA was written before the CEQ's final regulations were issued.

****

RHO-BWI-CD-19-REV *Constructing a Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, February 1978.

Refer to DOE/EA-0052 (Section 2.1) for information concerning this project.

****

3.2 Summaries of Misc. Hanford Site EAs

DOE/EA-0210D *Draft Environmental Assessment: Characterization of the Hanford Site Pursuant to the Nuclear Waste Policy Act of 1982, Richland, Washington*, February 1983.

This is a NWPA document. This EA was revised and became DOE/RW-0017(D).

****

DOE/RW-0017D *Draft Environmental Assessment: Reference Repository Location, Hanford Site, Richland, Washington*, December 1984.

This is a NWPA document.

Background: In February 1983, the DOE identified a reference repository location at the Hanford Site in Washington State as one of nine potentially acceptable sites for a mined geologic repository for spent nuclear fuel and radioactive HLW. The reference repository lies within the Pasco Basin, a 4,850-square kilometer (1,872-square mile) topographic depression in the Columbia Plateau and, more specifically, in the central part of the Cold Creek syncline.

On the basis of the evaluations reported in this EA, the DOE found that the Hanford Site qualified under the guidelines for potential site locations. The DOE also found that the Hanford Site was suitable for site characterization because the evidence did not indicate the site would not be able to meet the guidelines. The DOE nominated the Hanford Site as one of five sites suitable for characterization.

The EA is a three-volume set.

FONSI: A FONSI was not required under the NWPA.

Current Status: The BWIP was terminated in 1987.

****

EIA/WPR/77-3 *Environmental Impact Assessment: Coring Well, Hanford Reservation, Richland, Washington*, March 1977.

Background: This EIA proposed drilling a core well (ARH-DC-2) to test the geologic and hydrologic properties of the basalt rocks underlying the Hanford Site. The data were needed to support the National Waste Terminal Storage Program.

The proposed core well was to be located approximately 18 meters (59 feet) southwest of the existing deep drill hole ARH-DC-1, 183 meters (600 feet) north of the 200 East Area boundary fence, about 10.6 kilometers (6.6 miles) from the nearest active reactor site, and about 10 kilometers (6.2 miles) from the nearest section of the Columbia River. The core well was to have been approximately 1,006 meters (3,300 feet) deep and 10 centimeters (4 inches) in diameter.

Special Notice: The ERDA Assistant Administrator for Environment and Safety determined that an EA was unnecessary for exploratory borehole ARH-DC-3, based on the close proximity of the hole to core well ARH-DC-2 (analyzed in this EIA).

FONSI: A FONSI was not required because the EIA was written before the CEQ's final regulations were issued.

Current Status: The EIA was never finalized because borehole construction was terminated.

****

RHO-BWI-CD-19-REV *Constructing a Near-Surface Test Facility, Hanford Reservation, Richland, Washington*, February 1978.

Background: Refer to DOE/EA-0052 (Section 2.1) for information concerning this project.

4.0 WASHINGTON, D.C. (WASH)[1] DOCUMENTS - HANFORD SITE[2]

4.1 Numerical Listing of WASH D.C./Hanford Site Documents

WASH-1510 *Fast Flux Test Facility, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, May 1972.

****

WASH-1520 *Contaminated Soil Removal Facility, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, April 1972.

****

WASH-1521 *Radioactive Waste Evaporator and Auxiliaries, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, April 1972.

****

4.2 Summaries of WASH D.C./Hanford Site Documents

WASH-1510 *Fast Flux Test Facility, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, May 1972.

Background: The FFTF is a nuclear reactor complex designed for irradiation testing of fuels and materials to be used in future sodium-cooled fast breeder power reactors. This research and development (R&D) facility is in the AEC's LMFBR program. The design and construction of the FFTF were authorized in 1966 and 1967, respectively. Site preparation was initiated during the summer of 1970 and construction began in November 1971. The reactor was scheduled to begin operation in 1975.

The heart of the complex is a 400-MWt nuclear reactor fueled with a mixture of plutonium-uranium dioxide. It provided a fast neutron flux irradiation environment similar to that of an LMFBR. Radioactive waste materials were generated at the FFTF site as a result of operation and maintenance of the reactor and reactor systems. This liquid, solid, and gaseous waste was produced through fission in the fuel and activation of reactor structural materials, primary sodium coolant, and the reactor cover gas. The plutonium in the fuel was also a source of radioactivity.

---

[1] The WASH documents were issued by the AEC.

[2] All WASH documents predated the CEQ's regulation on the need for RODs.

The FFTF design guidelines emphasized use of existing technology. The facility was designed to operate reliably, safely, and with minimal environmental effects. The design effort had been and continues to be supported by a strong R&D program with emphasis on testing. Safety features of the FFTF included: (1) duplicate and independent plant monitoring systems that sensed any abnormalities and shut down the plant, (2) a low-pressure coolant system, (3) a guard vessel surrounding the reactor vessel, and (4) a separate plant containment structure.

The FFTF emitted vapor to the air. The FFTF was designed so that there was no planned, continuous, or intermittent releases of radioactive effluents to the environment, other than radioactive gas leaks that might have occurred through seals, by diffusion through structural materials, or during accident conditions.

Radioactive waste was collected and shipped to a remote processing and storage site within the Hanford Site complex, or to another location approved by the AEC. Shipment of radioactive material within the Hanford Site was in accordance with the AEC onsite procedures and regulations. Any offsite shipments of radioactive material from the plant were in compliance with regulations established by the AEC and the DOT.

The Hanford Site was selected because of proximity to project and design resources; availability of qualified management and technical personnel; availability of improved communications and travel facilities; extensive experience in the development of plutonium fuels; and experience in the design, construction, and operation of large power reactors such as the Hanford Site N Reactor.

Alternatives:

1. FFTF (the preferred alternative)--The existing fast flux reactors, Experimental Breeder Reactor No. II and Fermi, were not designed originally as fuel and material test facilities. These reactors could provide an interim measure of fast flux tests, but were inadequate to accomplish the in-depth testing needed for LMFBR demonstration and commercial plants. Both Experimental Breeder Reactor No. II and Fermi had limitations as to neutron flux spectrum, sodium coolant conditions typical of the future LMFBRs, testing capability required for highly instrumented and controlled fast flux environment tests, and adequate test space. As a result of the series of thermal neutron flux and fast neutron flux test facility studies, the AEC decided in 1965 that construction of an FFTF must be undertaken if the national objectives of the LMFBR R&D program were to be achieved.

2. Thermal Flux Test Facilities--Fast breeder reactor fuels and materials required a test environment of high-temperature flowing sodium, a fast neutron flux environment, and high sodium temperature differentials to adequately duplicate the behavior of LMFBR fuels. None of the existing thermal flux reactors could be altered to provide a large enough fast flux and a proper environment for u in the LMFBR fuels and materials test program.

Current Status: The FFTF was built between 1969 and 1978 and achieved full power in 1980. Operations began in 1982. The FFTF developed advanced nuclear fuels and materials for liquid metal reactors. It was used to test technologies essential to space power, fusion energy, medical and commercial isotope production, and eventually to eliminate nuclear HLW. Canada, Japan, and several European nations used the reactor to support development of their domestic advanced energy systems. As of September 1995, the facility has been shutdown (Reference DOE/EA-0993).

****

WASH-1520 *Contaminated Soil Removal Facility, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, April 1972.

Background: This WASH document proposed removing plutonium-contaminated soil from the floor of an existing enclosed trench (Z-9 in the 200 West Area) used between July 1955 and June 1962 for subsurface disposal of plutonium-contaminated liquids. Liquid waste from the PFP had been discharged to enclosed trenches since startup of the facility in 1950. Most of the plutonium in the liquid waste was retained by the soil and held within a few vertical feet of the point of release. Because of the quantity of plutonium contained in the soil, special precautions and emergency plans were required that were not required for other enclosed trenches.

In this EIS, the DOE proposed constructing facilities at the Z-9 Trench to permit excavation of contaminated soil, adding equipment to the existing PFP for recovering plutonium from the contaminated soil, and constructing an underground storage vault for interim storage of contaminated soil.

Removal of the plutonium-contaminated soil would eliminate the need for special precautions and the necessary emergency plans to ensure the safe storage of plutonium. Because of the quantity of plutonium contained in the soil of the Z-9 Trench, a nuclear chain reaction was considered. Even though the probability of this occurrence was thought to be remote, it was determined that the removal of the contaminated soil would eliminate any possibility of such an event.

It was estimated that $\pm$100 kilograms (2,205 pounds) of plutonium were contained in the 51-cubic meter (66.71-cubic yard) volume of contaminated soil to be removed from the Z-9 Trench. It was believed that more than three-fourths of the plutonium in the soil (worth approximately $3,000,000) could be economically recovered in the nearby PFP. The proposed operation also permitted extensive evaluation of soil-dissolution and plutonium-extraction techniques. Residues from the extraction operations and contaminated soil with insufficient plutonium to permit economical extraction would be packaged in plastic bags, placed in steel drums, and stored in a new underground storage vault. Because the contaminated soil would be packaged in steel drums, the soil could be moved to another location.

The proposed operation also would permit the extensive evaluation of techniques f removing and measuring contamination in soil. Appropriate adjustments could be made in the excavation plans as the soil was removed and the plutonium measurements were made.

The Hanford Site is interspersed with chemical separation facilities, underground pipelines and tanks, and supporting facilities in the 200 West Area. The aboveground structures of the Contaminated Soil Removal Facility would be removed after the soil removal operations were complete. These operations took place from 1974 to 1976. The facilities would be designed to avoid release of any contaminated soil during soil recovery and storage.

Alternatives: Alternatives to the proposed Contaminated Soil Removal Facility are as follows:

- The preferred action alternative would involve changes in the scope of the recovery concepts (i.e., hand excavation versus remote mechanical removal and vault storage of the contaminated soil without leaching).

- The no-action alternative would involve continued retention of the plutonium in the enclosed trench.

Current Status: After assessing the benefits to be obtained from removing plutonium-contaminated soil from the Z-9 Trench, and after considering the range of alternatives and their environmental impact, the AEC concluded that the proposed action should be undertaken. The Contaminated Soil Removal Facility is now decommissioned and waste has not been placed in the Z-9 Trench since June 1962.

****

WASH-1521 *Radioactive Waste Evaporator and Auxiliaries, U.S. Atomic Energy Commission, Hanford Reservation, Richland, Washington*, April 1972.

Background: This WASH document proposed that the radioactive waste generated by operations at the Hanford Site could be safely stored and processed according to an established Waste Management Program. The AEC was converting highly radioactive liquid waste stored in buried, steel-lined, concrete tanks into solid, retrievable salt cake. The three waste evaporators used in the program had limited evaporative capacity and a limited heat removal capability in the waste tanks. This restricted the rate and efficiency of converting the liquid waste to salt cake. The storage tank volume close to the existing evaporator facilities was not sufficient to contain all of the resulting salt cake.

The Environmental Statement asserted that the operation of the radioactive waste evaporator and auxiliaries would alleviate the previously mentioned problems. T radioactive waste evaporator would be an evaporator-crystallizer unit that would

process twice as much liquid waste as the existing three evaporators combined. The new unit would be located near underground storage tanks suitable for storing additional waste for solidification.

The auxiliaries would consist of pipelines and equipment modifications to allow the use of existing tanks for salt cake storage. The auxiliary tanks also would allow existing tanks to be used for neutralizing the excess alkalinity in concentrated liquid waste, and as concentrated waste coolers. The neutralization facility was necessary to solidify the fraction of the liquid waste that could not be converted to a salt cake by evaporation alone. The cooling facility would increase the evaporation rate for liquid waste by 10 to 20 percent.

The radioactive waste evaporator-crystallizer would operate at full capacity for about three years or until the backlog of liquid radioactive waste at the Hanford Site had been reduced to salt cake. It would be operated either at reduced rates or intermittently to process the remaining waste (i.e., those requiring an aging period of three to five years before they could be solidified). At the end of its useful life, the radioactive waste evaporator-crystallizer was to be decommissioned.

Effluents from the radioactive waste evaporator-crystallizer would include process and steam condensates, cooling water, human waste, contaminated solid waste, and ventilation air. Those effluents, which would contain radionuclides, would be treated to reduce their radionuclide concentration to ALARA levels before being discharged to an enclosed trench. The total yearly discharges contained in the condensates were estimated to be less than 0.2 curie of cesium-137, 0.01 curie of strontium-90, 0.07 curie of ruthenium-106, and 0.01 gram of plutonium-239. These releases would be in concentrations below applicable federal guidelines, and there would be no measurable effect at or near the Columbia River.

Alternatives: The alternatives included the following:

- The preferred alternative was to build the radioactive waste evaporator-crystallizer facility.
- The continued use of the existing evaporators, which would have a combined capacity of less than one-half of the radioactive waste evaporator-crystallizer system and would require approximately 5 years more to complete the in-tank solidification of the waste being stored at the Hanford Site
- The use of other dewatering concepts, including atmospheric evaporation of water, calcination of waste, sorption of water by chemicals, and air drying.

Current Status: In 1980, the 242-S Evaporator was shut down and placed in standby condition three. Standby condition three means that no future use of the facility as an evaporator is foreseen. As of September, 1995, the 242-S Evaporator is being used as a

monitoring station for selected 200 West Area tank farm alarms. The facility is locked and entered only to obtain specific alarm readings.

For more information, contact J. R. Biggs on 372-2678.

5.0 U.S. ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION DOCUMENTS - HANFORD SITE[1]

5.1 Numerical Listing of Hanford Site ERDA Documents

ERDA-1538 *Waste Management Operations, Hanford Reservation, Richland, Washington*, final, December 1975.

****

ERDA-1550 *High-Performance Fuel Laboratory, Hanford Reservation, Richland, Washington*, final, September 1977.

****

ERDA-1556 *High-Flux Neutron Source Facility, Hanford Reservation, Richland, Washington*, July 1977.

The finalized EIS was DOE/EIS-0017.

****

5.2 Summaries of Hanford Site ERDA Documents

ERDA-1538 *Waste Management Operations, Hanford Reservation, Richland, Washington*, final, December 1975.

Background: Since 1944, when the first Hanford Site facilities began producing plutonium for the Manhattan Project, radioactive waste has been generated. Consequently, there has been a continuous and evolving program for waste management.

This document was written for the Waste Management Operations Program at the Hanford Site. The draft statement was issued as WASH-1538. This statement reassessed the environmental impacts associated with continuing the Hanford Site Waste Management Operations Program to provide information for use in planning and decision making to ensure that further waste management practices would be conducted to minimize adverse environmental consequences. The foreword of this document provided an introductory summary of: (1) the policies, plans, and standards applicable to the Hanford Site Waste Management Operations Program; (2) the Waste Management Operations Program; and (3) the programs and activities at the Hanford Site that were not covered in this EIS.

[1] All ERDA documents predated the CEQ's regulation on the need for RODs.

The quantities of materials released to the environment from Hanford Site operations were anticipated to decline as a result of: (1) modifications of old and construction of new facilities, and (2) curtailment of production activities.

Waste generated by production, R&D, and other programs and activities at the Hanford Site were covered in this document. This document did not cover the alternatives and/or costs and benefits with respect to the production of special nuclear materials or the operation of R&D programs. The operation of N Reactor and the PUREX Chemical Processing Plant were beyond the scope of this document.

Because the Waste Management Operations Program at the Hanford Site is an ongoing program, many of the long-term and short-term options for the control, handling, and disposal of radioactive waste were in various stages of R&D. Although the status of these R&D efforts was discussed in the statement, some of these R&D programs required their own Environmental Statements at a later time.

Alternatives: Ultimate-disposal R&D would be periodically reevaluated so that an appropriate impact statement relating to ultimate disposal could be prepared as soon as sufficient information was available.

Alternatives to HLW treatment were as follows:

- The preferred alternative was to continue the present program, which was solidifying the liquid waste to a salt cake form and constructing additional DSTs to contain the liquids during interim periods.

- Shutdown of N Reactor in 1978, 1983, or 1990, which would lead to ending the generation and processing of most new radioactive waste.

- Shutdown of PUREX in 1978, 1983, or 1990. Two options were presented: first, shut down after processing all N Reactor fuel currently on hand; and second, shut down now with the existing inventory of irradiated N Reactor fuel either shipped offsite for processing or stored onsite without processing.

- Discontinue solidifying salt cake with the goal of converting the liquid HLW to a better solid form for interim storage, or holding the remaining liquid waste until an ultimate disposal method was developed and implemented. Implicit in these options was the need to construct new DSTs.

****

ERDA-1550 *Final Environmental Impact Statement: High-Performance Fuel Laboratory, Hanford Reservation, Richland, Washington*, September 1977.

Background: The High-Performance Fuel Laboratory (HPFL) was to provide pilot-scale tests for safe, fast breeder reactor fuel manufacturing. The experience of designing, constructing, and operating the HPFL would have been used in future commitments to commercial fuel fabrication plants.

During normal HPFL operations, it was anticipated that extremely small quantities of noxious substances might be released into the atmosphere in spite of the multiple filtration features of the ventilation system. Releases of nonradioactive noxious substances into the atmosphere would have been within acceptable limits and were not expected to cause any health effects. The calculated doses to the population resulting from radioactive releases were to be negligible.

Benefits from the fuel fabrication development program and the HPFL would have been as follows:

- To society--Improved safeguards, reduced personnel exposure, releases in accordance with ALARA, and minimum generation of waste.
- To technology--Development and evaluation of improved fuel fabrication processes and equipment; simplification of current fuel fabrication and assembly processes; demonstration of online, timely inventory control and accountability; and demonstration of online product inspection.
- To industry--Demonstration of fabrication methods; generation of data to determine capital investment requirements; creation of a pilot line for process and equipment evolution; demonstration of process; demonstration of the use and handling of light-water, reactor-derived, recycle plutonium; demonstration of industrial-scale equipment and processes; and participation in program planning.

Alternatives: The alternatives for the project were as follows.

- The preferred alternative was to build the HPFL in the 400 Area of the Hanford Site.
- Alternative technologies could have been examined (e.g., the mixed oxide dry powder fuel fabrication technique).
- Alternative designs identified and considered during the first phases of the HPFL exhibited higher costs and greater difficulties of program operation than the proposed facility.

- Potential use through modification of existing facilities at the Hanford Site was considered in the initial design effort.
- Each of the other alternative sites for the HPFL had its own particular set of characteristics that rendered it more or less desirable.
- The no-action alternative of not constructing the HPFL would have placed the burden of advanced LMFBR fuel development on private industry.

Current Status: For programmatic reasons, certain features of this proposed action were blended into the Process Facility Modifications (PFM) Project (DOE/EIS-0115D) when it was built. The HPFL was never built.

****

ERDA-1556 *High-Flux Neutron Source Facility, Hanford Reservation, Richland, Washington,* draft, July 1977.

Current Status: This draft was finalized as DOE/EIS-0017; no action resulted.

6.0 ENVIRONMENTAL IMPACT STATEMENTS - HANFORD SITE

6.1 Numerical Listing of Hanford Site EISs

DOE/EIS-0017 *Fusion Materials Irradiation Testing Facility, Hanford Reservation, Richland, Washington*, final, April 1978.

****

DOE/EIS-0046 *Management of Commercially Generated Radioactive Waste, Hanford Site, Richland, Washington*, final, October 1980.

The ROD was approved then published in the FR, May 14, 1981 (46 FR 26677).

****

DOE/EIS-0063 *Waste Management Operations, Double-Shell Tanks for Defense High-Level Radioactive Waste Storage, Hanford Site, Richland, Washington*, final, April 1980.

This EIS was written as a supplement to ERDA-1538. The ROD was the first ROD approved for the Hanford Site and was published in the FR, July 9, 1980 (45 FR 46155).

****

DOE/EIS-0080 *Decommissioning of the Shippingport Atomic Power Station, Hanford Site, Richland, Washington*, final, May 1982.

The EIS was written for the Shippingport Atomic Power Station in Beaver County, Pennsylvania. The decommissioning was managed by RL and Hanford Site contractors. The ROD was published in the FR, August 19, 1982 (47 FR 36276).

****

DOE/EIS-0089 *Operation of PUREX and Uranium Oxide Plant Facilities, Hanford Site, Richland, Washington*, Addendum, February 1983.

Considered by DOE to be final when used in conjunction with DOE/EIS-0089D. The ROD was approved in the FR, May 16, 1983 (48 FR 21993).

****

DOE/EIS-0113 *Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes, Hanford Site, Richland, Washington*, final, December 1987.

The ROD was approved and published in the FR, April 14, 1988 (53 FR 12449).

****

DOE/EIS-0115D *Process Facility Modifications Project, Hanford Site, Richland, Washington*, April 1986, draft was canceled.

The project was canceled.

****

DOE/EIS-0119 *Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*, final, September 1993.

The ROD was approved in the FR, September 16, 1993 (40 FR 20489, 54 FR 18325, 58 FR 48509).

****

DOE/EIS-0189D* *Tank Waste Remediation System Environmental Impact Statement, Hanford Site, Richland, Washington*, draft.

The EIS is being prepared (59 FR 4052).

****

DOE/EIS-0203* *Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs, Part III*, final.

The EIS was issued June 1, 1995 (60 FR 28680).

****

DOE/EIS-0212D* *Safe Interim Storage of Hanford Tank Wastes, Hanford Site, Richland, Washington*, draft.

The EIS is being prepared (59 FR 39329).

****

DOE/EIS-0222D* *Hanford Remedial Action Environmental Impact Statement, Richland, Washington*, draft.

The EIS is being (57 FR 37959).

****

DOE/EIS-0244D* *Plutonium Finishing Plant, 200 West Area, Hanford Site, Richland, Washington*, draft.

The EIS is being prepared (59 FR 53969, and 59 FR 60358).

****

DOE/EIS-0245D* *Management of Spent Nuclear Fuel From the K-Basins at the Hanford Site, Richland, Washington*, draft.

The Notice of Intent (NOI) to prepare an environmental impact statement was published in the FR on March 29, 1995 (59 FR 32688, 60 FR 15905, 60 FR 20979, 60 FR 28680). The EIS is being prepared.

****

6.2 Summaries of Hanford Site EISs

DOE/EIS-0017 *Fusion Materials Irradiation Testing Facility, Hanford Reservation, Richland, Washington*, final, April 1978.

Background: This EIS originated as the draft document ERDA-1556(D). This EIS proposed constructing and operating an irradiation test facility, the Deuterium-Lithium High-Flux Neutron Source (HFNS) Facility in the 300 Area of the Hanford Site. This project would have consisted of a test building and an accelerator building with an interconnecting transport tunnel for the deuteron beam.

Test specimens would have been fabricated into irradiation assemblies in existing Hanford Engineering Development Laboratory facilities, and irradiated test specimens transferred to existing Hanford Engineering Development Laboratory facilities for examination.

Alternatives: The alternatives discussed in the EIS included the following.

- The preferred alternative was to construct and operate an irradiation test facility, the HFNS, in the 300 Area of the Hanford Site.
- Alternative designs that were investigated included engineering design features and procedural safeguards to minimize environmental hazards during and after conceivable natural occurrences and accidents, as well as during normal operation.
- Alternative facility locations were examined to determine whether any other sites were preferable to the Hanford Site's 300 Area. A preferable site would have been one that offers the potential for reducing the environmental impact from facility construction and operation. Alternatives included different DOE national laboratories and other locations within the Hanford Site.
- Modification of existing facilities was considered to provide the physical plant equivalent to the Accelerator Building and/or the Test Building. This would have reduced the commitment of resources, thus further reducing the small impact of siting the new building and possibly reducing the cost of the project. Existing facilities in the 300 Area were surveyed for suitability and availability. The 309 Building was identified as a potential candidate to serve as the HFNS Test Building.

ROD: The ROD was never approved.

Current Status: The Fusion Materials Irradiation Testing Facility Project was canceled.

****

DOE/EIS-0046 *Management of Commercially Generated Radioactive Waste, Hanford Site, Richland, Washington*, final, October 1980.

Background: This EIS proposed a programmatic strategy that emphasized development of conventionally mined waste repositories deep in the earth's geologic formation for disposing commercially generated HLW and TRU waste. Because of the programmatic nature of this document and the preliminary nature of certain design elements assumed in assessing the environmental consequences of the various alternatives, this study was based on generic rather than specific systems.

The main objective of waste disposal was to provide reasonable assurance that this waste, in biologically significant concentrations, would be permanently isolated from the human environment. To provide input to the decision on a planning strategy for disposing of this radioactive waste, this EIS presented an analysis of environmental impacts that could occur if various technologies for management and disposal of such waste was to be developed and implemented.

The DOE was responsible for developing technologies for management and disposal of commercially generated TRU HLWs. The HLW was defined as either the aqueous solution from the first-cycle solvent extraction where spent fuel was reprocessed for recycling of uranium and plutonium or the spent fuel itself if that fuel was to be disposed properly. The HLW also was intensely radioactive. Other waste was generated during reprocessing that, although larger in volume than HLWs, was less intensely radioactive. Waste that contained more than a specified amount of radionuclides of atomic number greater than that of uranium was called TRU waste. Special attention was given to TRU waste because it contained alpha particle-emitting nuclides that were of particular concern as a result of their long half-lives and tenacious retention if incorporated in the body. Other waste forms that included neither HLW or TRU waste were called LLWs.

Alternatives: The alternatives discussed in the EIS included the following:

- Preferred alternative--The R&D program for waste management would emphasize the use of mined repositories in geologic formations (in the continental United States) capable of accepting radioactive waste from either the once-through or reprocessing cycles, while continuing to examine subseabed and very-deep-hole disposal as potential backup technologies. This action would be carried forward to identify specific locations for the construction of mined repositories. The proposed action did not preclude further study for other disposal techniques.

- Alternative action--Candidate technologies for parallel development strategy would have been:

  - Rock-melt waste disposal,

  - Island-based geologic disposal,

  - Ice sheet disposal,

  - Well injection disposal,

  - Transmutation concept,

  - Space disposal,

  - Placement in the sediment beneath the deep ocean (subseabed),

  - Disposal in very deep holes.

- No-action alternative--Existing spent fuel would be left indefinitely where it was currently stored. Any additional spent fuel discharged from future operation of commercial nuclear power plants would likewise be stored indefinitely in water basin facilities, either at the reactors or at independent sites.

ROD: The ROD was approved in the Federal Register, May 14, 1981 (46 FR 26677).

The ROD called for the DOE to select a strategy for the disposal of commercially generated radioactive waste and the supporting program of R&D. Actions of the ROD included the following:

- Adopt a strategy to develop mined geologic repositories for disposal of commercially generated HLW and TRU radioactive waste, while continuing to examine subseabed and very-deep-hole disposal as potential backup technologies.

- Conduct an R&D program to develop repositories and the necessary technology to ensure the safe long-term containment and isolation of this waste.

Alternatives considered were:

- Mined repositories,

- Parallel technology development, and

- No-Action alternative.

The decision to proceed with a programmatic strategy favoring the disposal of commercially generated radioactive waste in mined geologic repositories was based on the DOE's commitment to the early and successful solution of the Nation's nuclear waste disposal problem. This would maintain the viability of nuclear energy as a future energy source for the United States. This decision also saved money by focusing federal funds on the further development of the most advanced disposal technique.

Current Status: The draft version of this document was used on the Hanford Site in the 1970's and 1980's for the preparation of EAs. At that time, it was known as the Generic/General Hanford Environmental Impact Statement. The document is no longer used for that purpose.

****

DOE/EIS-0063 *Waste Management Operations, Double-Shell Tanks for Defense High-Level Radioactive Waste Storage, Hanford Site, Richland, Washington*, final, April 1980.

Background: This EIS proposed completing the construction and operation of 13 tanks for radioactive liquid HLW storage on an interim basis until long-term or final disposal of the waste could be achieved. This EIS was written as a supplement to ERDA-1538. The scope of the EIS included the examination of design

alternatives for the tanks under construction. The new facilities under construction consisted of thirteen 3.8 million-liter (1,300,854-gallon) high-activity waste tanks and their auxiliaries. All 13 tanks were being built in the 200 East Area of the Hanford Site. Impacts of the various design alternatives considered in this EIS were assessed on the basis of the effects of the designs on tank durability, ease of waste retrieval from such tanks, choices (and timing of such choices) for a long-term radioactive waste storage and final disposal technology, as well as the environment in general.

This EIS did not address the environmental consequences of using the tanks for long-term storage; the plan called for using the tanks only on an interim basis. The design life of the new tank system was considered sufficient to contain the waste pending implementation of long-term disposal.

Alternatives: The alternatives discussed in the EIS were as follows:

- The preferred alternative was to complete construction and use the 13 new DSTs for interim storage of liquid HLW at the Hanford Site. Construction of the tanks was completed and tank use was scheduled to begin in May 1980, after operational testing of all mechanical components and control instruments.
- Use thicker and more chemically resistant steel plates.
- Use an impressed current cathodic protection system to guard the tanks against stress corrosion cracking.
- Use better waste retrieval equipment and enlarged tank openings to facilitate waste removal from tanks at some future date.
- Compare the use of cooling coils to the use of air cooling now provided in the design and construction of the 13 tanks at the Hanford Site.
- The no-action alternative stated that the 13 tanks need not have been constructed and that existing storage tanks would be used as part of the continued present action. The no-action alternative was discussed and shown to be unacceptable.

ROD: The ROD was published in the FR, July 9, 1980 (45 FR 46155).

The ROD called for construction of the 13 DSTs so they could be used to store defense radioactive HLW at the Hanford Site.

Actions under the ROD included the following:

- The DOE action covered construction and operation of the 13 tanks. The DSTs would be designed to safely contain liquid radioactive waste for an interim period.
- The new DSTs would employ significant design and safety improvements over the 140 SSTs.

Current Status: The DSTs were constructed and are currently used in operations.

****

DOE/EIS-0080 *Decommissioning of the Shippingport Atomic Power Station, Hanford Site, Richland, Washington*, final, May 1982.

Background: This EIS preferred alternative was to dismantle and remove all fluids, piping, equipment, components, structures, and waste (having radioactivity levels greater than those permitted for unrestricted use) to a waste disposal area. The Hanford Site and Savannah River Site were chosen as possible disposal areas. DOE also proposed decommissioning the Shippingport Atomic Power Station near the Ohio River in Shippingport, Pennsylvania. The Shippingport Atomic Power Station was constructed during the mid-1950's as a joint project of the federal government and the Duquesne Light Company to develop and demonstrate pressurized water reactor technology and to generate electricity. The station consisted of a pressurized water reactor, a turbine generator, and associated facilities. The reactor and steam generation portions of the station were owned by the DOE. The electricity-generating portion of the station was owned by the Duquesne Light Company.

The station achieved criticality in December 1957 and had been operated by the Duquesne Light Company under supervision of the DOE Division of Naval Reactors since that time. The station had produced over 6.6 billion kilowatt-hours of electricity. Operation of the station resulted in 37 man-rem of occupational exposure in 1979.

Alternatives: The alternatives discussed in this EIS were as follows:

- The preferred alternative was the immediate dismantling of the Shippingport Atomic Power Station. This included the removal from the site, shortly after shutdown, of all fluids, piping, equipment, components, structures, and waste having radioactivity levels greater than those permitted for unrestricted use. Immediate dismantling resulted in a lower cost than any other decommissioning alternative.

- The safe storage alternative involved dismantling the facility after a storage period of several decades, during which radioactive isotopes would be allowed to decay. During preparation for safe storage, radioactive materials outside the safe storage boundaries would be removed. Security, surveillance, maintenance, and radioactive monitoring would be continued during the safe storage period. Safe storage followed by deferred dismantling would have resulted in higher costs than immediate dismantling and prohibited unrestricted use of the facility and site until deferred dismantling was completed.

- The entombment alternative involved complete isolation of the radioactivity in the station from the environment by means of massive concrete and steel barriers until the radioactivity had decayed to innocuous levels. The pressure vessel cladding and internals might have been removed before entombment or might have been left within the entombed structure, depending on the inventory of radioactivity. Maintenance, surveillance, and occasional monitoring would have been required for this alternative.

- The first no-action alternative involved continuing operation of the station to produce electricity. Because the DOE had no continued use for the station, further operation would have required the utility to purchase the station from the federal government and obtain an operation license from the NRC. Because the station was over 20 years old, it was likely that extensive analyses and modifications would have been necessary to meet current NRC requirements.

- The second no-action alternative involved defueling and closing the station, and continuing some monitoring, surveillance, and maintenance of important plant systems. Closing the station while continuing maintenance, monitoring, and surveillance would have left the station intact and would have permitted

some decaying of cobalt-60. This would have delayed the decision as to the station's eventual disposition.

- The third no-action alternative involved defueling and closing the station and doing nothing further. This was not an acceptable alternative because the public would have had direct access to radioactive water, equipment, and other material, as well as to high dose rate areas in the station. A substantial effort would have been required to ensure that the radioactivity remaining in the station after defueling constituted no hazard to the public.

ROD: The ROD was published in the FR, August 19, 1982 (47 FR 36276).

The DOE decided to decommission the Shippingport Atomic Power Station. The station would be decommissioned by dismantling immediately following end-of-life testing and defueling of the reactor.

Actions under the ROD included the following.

- Contract No. E(36-1)-292 covered the working relationship between the DOE and the Duquesne Light Company for construction and operation of the Shippingport Atomic Power Station. This contract required that the DOE, on expiration or termination of the contract, "make the nuclear portion of the plant safe from a radiation standpoint."

- All practicable means to avoid or minimize environmental harm from the selected alternatives would be adopted. Plans were developed to keep all radiation exposures ALARA. For example, one-piece removal of the pressure vessel was studied as a way to reduce both occupational radiation dose and cost.

- Workers would wear dosimeters that would need to be checked frequently to ensure compliance with occupational radiation dose guidelines.

- The existing onsite and offsite radiation monitoring program or an equivalent program would be in operation during decommissioning.

- No liquids would be released to the Ohio River unless they met applicable federal and state standards and permit conditions.

- Radioactive waste would be transported according to DOT regulations and would be buried at a DOE disposal site in accordance with criteria established by DOE Order 5480.1A (DOE 1988).

- The volume of radioactive waste from immediate dismantling would have virtually no impact on available DOE disposal space.

- Occupational safety and health practices would be in operation according to the directives of DOE Order 5480.1A (DOE 1988) and applicable state and federal laws.

Current Status: The Shippingport Atomic Power Station in Beaver County, Pennsylvania has been D&D'd and the waste was disposed at the Hanford Site.

****

DOE/EIS-0089 *Addendum: Operation of PUREX and Uranium Oxide Plant Facilities, Hanford Site, Richland, Washington*, February 1983.

Background: This EIS analyzed the environmental effects of the DOE proposal to resume operation of the PUREX and Uranium Trioxide (UO_3) chemical processing facilities, which are located on the Hanford Site near Richland, Washington. The draft [DOE/EIS-0089(D)] and the addendum (DOE/EIS-0089) make up the Final EIS for the PUREX Facility. The PUREX and UO_3 facilities were used to process irradiated fuels and separate plutonium, uranium, and neptunium for use in the DOE's defense and R&D program. The PUREX and UO_3 facilities were used from 1956 to 1972 to process the irradiated fuels produced by up to nine production reactors located on the Hanford Site.

After the PUREX and UO_3 facilities processed the inventory of irradiated fuels available in 1972, their continued operation to process fuel produced from the only operating reactor at the Hanford Site was no longer economical. Plans were made to operate the facilities on a batch basis when sufficient quantities of irradiated fuel were available for processing and plutonium was required for defense program and R&D purposes. Therefore, the PUREX and UO_3 facilities have been maintained in standby condition since 1972. During this standby period, modifications have been made to the facilities to mitigate the environmental impact of their operation and to maintain their operational viability. It was determined that processing of the irradiated fuels was required to meet the Nation's defense and R&D needs.

The PUREX and UO_3 facilities consisted of chemical processing facilities used from 1956 to 1972. Modifications identified in ERDA-1538 have been incorporated into the facilities since 1975.

These improvements mitigated the environmental impacts and improved safety aspects by: (1) reducing process condensate discharge, (2) improving plant protection measures, and (3) recovering krypton gas.

The radionuclides in the process condensates discharged to the ground through cribs were reduced to less than 50 percent of the 1972 values. Similarly, plutonium contained in liquid effluents discharged to cribs was reduced from about 4 curies per year to an estimated 0.4 curies per year. The radionuclides contained in the ammonia scrubber waste were concentrated by distillation and stored in underground DSTs. The risk of theft or sabotage was reduced by enhanced safeguards for special nuclear materials and improved facility protection measures.

An additional modification considered, but not included in the proposed action, was recovering krypton-85 gas from fuel dissolved offgases before discharge to the environment through the 61-meter (0.0379-cubic yard) stack. The estimated capital cost would be $20 million for collection equipment, plus about $150 million for storage facilities.

Alternatives: The alternatives discussed in the EIS included the following:

- The preferred action was the resumption of operation of the Hanford Site PUREX and UO_3 facilities to process irradiated N Reactor-equivalent fuel.
- Construction of a new fuel processing facility on the Hanford Site.
- Processing fuel offsite; however, this would have increased the risk of releases during fuel transport and handling.
- No action would have postponed the decision; however, there would be some potential for release during fuel storage.

ROD: The ROD was published in the FR, May 16, 1983 (48 FR 21993).

The DOE decided to resume operation of the PUREX and UO_3 chemical processing facilities at the Hanford Site.

Actions under the ROD included the following:

- All releases to the air and groundwater, and all population and occupational exposures from operation of the PUREX and UO_3 facilities would be below levels established under the DOE standards and guidelines.

- All practicable means to further mitigate environmental impact and safety concerns were to be adopted. In this regard, modifications that were or are being made to the facilities would include the following:

  - Gaseous effluent control improvements,

  - Liquid effluent control improvements,

  - Upgraded PUREX ventilation system,

  - Additional security and safeguards procedures and systems for protection of special nuclear materials,

  - A new criticality alarm system to improve nuclear criticality accident detection and permit more effective mitigative steps,

  - Upgraded ventilation systems at the UO_3 Plant product loadout station,

  - Upgraded fire protection systems at both the PUREX and UO_3 facilities,

  - New transfer lines to underground storage tanks,

  - Seismic protection upgrades,

  - Plutonium oxide production system within the PUREX Facility.

- The DOE continued to monitor the site with environmental measurement and surveillance programs. An expanded radiological surveillance program initiated in 1979 continued.

Current Status: In 1990, DOE determined that the PUREX Facility would longer operate. The plant is shutdown, deactivated, and readied for D&D. As of September 1995, an environmental assessment has been removed to transfer irradiated fuel from

the PUREX plant to the K Basins (Reference DOE/EA-0988). The fuel is expected to be transferred from the PUREX plant in September 1995.

****

DOE/EIS-0113 *Disposal of Hanford Defense High-Level, Transuranic and Tank Waste, Hanford Site, Richland, Washington*, final, December 1987.

Background: This EIS examined the potential impacts calculated for the final disposal of existing high-level TRU and tank waste stored at the Hanford Site since 1943 and future waste. Waste excluded from the scope of this EIS was LLW and waste associated with the D&D of existing surplus or retired Hanford Site facilities. However, included was the waste from D&D of future facilities such as the Hanford Waste Vitrification Plant (HWVP) that might be built and operated in direct support of disposal actions addressed in the EIS. While existing and future waste lends themselves to the same type of treatment afforded commercial nuclear waste, the older tanks, cribs, and burial sites contain a variety of waste in forms that could require specialized treatment and recovery.

For purposes of analysis, the waste under the scope of this EIS was divided into six classes; four of these consisted of waste stored or future waste to be placed in interim storage pending disposal, and two classes were waste previously disposed of as LLW. Because of their TRU content, these two were reexamined to determine whether any additional protection was justified.

Existing tank waste, the first waste class, was subdivided further into SSTs and DSTs as a result of the physical and chemical differences in tank contents. The SSTs contain mostly solid waste not readily retrievable. The DSTs contain liquids and suspended solids that are readily retrievable by pumping and sluicing.

Future tank waste, the second waste class, included waste generated from the PUREX Facility's operations after October 1983. This waste was stored in DSTs as liquids and suspended solids that are readily retrievable by pumping and sluicing.

Strontium and cesium capsules, the third waste class, were stored in water basins until disposal. After their useful life, the capsules would be returned for disposal. This waste would be double encapsulated in stainless steel or alloy.

Retrievably stored and newly generated TRU waste, the fourth waste class, contained solid TRU waste produced since 1970 and packaged, labeled, and stored pending final disposal.

The TRU-contaminated soil sites, the fifth waste class, were sites that contained specific contaminated soil from disposal of liquid waste in cribs, ditches, trenches, settling tanks, French drains, and reverse wells (also known as injection wells). Although previously disposed of, this waste was reexamined to determine whether additional environmental protection was warranted.

Lastly, pre-1970-buried suspect TRU-contaminated solid waste, the sixth waste class, contained general trash and failed equipment buried in trenches before 1970. Although previously disposed, this waste also was reexamined to determine whether additional protection was warranted.

Most of the impacts identified would be because of a loss of active institutional control in the year 2150, which was assumed for all alternatives. These impacts were not representative of continued waste practices.

This EIS was both a programmatic EIS, which was intended to support broad decisions about the disposal strategies for the Hanford Site waste addressed in this EIS, and an implementation EIS intended to provide project-specific environmental input for decisions on certain disposal activities and facilities.

The EIS was prepared before Washington State was granted authority pursuant to the RCRA for mixed waste. The appropriate application of the RCRA and CERCLA to the waste classes in the EIS has not been addressed.

Subsequent to the issuance of the ROD in 1988, the Tri-Party Agreement (Ecology et al. 1992) was signed by the EPA, Ecology, and DOE to implement many of the actions discussed in the ROD, and thus to ensure compliance with the RCRA and CERCLA requirements.

Other laws, standards, and regulations were applicable primarily during operational phases. Operational experience suggests that compliance with these other laws and regulations would not be affected significantly, regardless of the alternatives selected.

Alternatives: The three disposal or enhanced-protection alternatives initially selected for detailed analysis are the following:

- Geologic disposal--Most (98 percent by activity) of the waste within the scope of this EIS would be retrieved (to the extent practicable) and processed, with some packaged and transported for disposal in either an onsite or offsite geologic repository. The remainder would be disposed of onsite and isolated with a protective barrier and marker system.

- In-place stabilization and disposal--The DST waste would be retrieved and grouted in near-surface vaults. The TRU and SST waste would be stabilized in their existing locations to the extent practicable and covered with a protective barrier and marker system. Encapsulated strontium and cesium would be retrieved from water basins, placed in an additional package, placed in a drywell storage facility, and isolated from the environment by a protective barrier and marker system.

- Reference alternative (combination disposal)--Elements of the geologic disposal and in-place stabilization and disposal alternatives would be employed to provide a balanced disposal or enhanced-protection approach that would give reasonable expectation that this alternative will limit risks to populations over the long term, without incurring near-term risk because of disturbing waste that is currently stable and difficult to retrieve. Readily retrievable waste would be processed for geologic disposal. Other waste would be disposed of in place. All waste disposed near the surface would be isolated from the environment by a protective barrier and marker system.

A no-action alternative, continued storage of the waste, also was considered in detail. The DOE did not consider this alternative to be a viable long-term option based on current waste management policies, particularly in view of the large accumulated costs associated with maintaining the waste in a storage mode for many centuries. The no-action alternative was analyzed in accordance with the CEQ regulations. In the short term (i.e., for periods less than 100 years), the no-action alternative could be considered as a "delay major action" alternative, after which time disposal alternatives could be considered. If the DOE were to choose the no-action alternative, waste would remain as disposed of or continue to be stored indefinitely using existing storage practices with planned improvements to comply with the RCRA and CERCLA requirements, as applicable. Active administrative control would be provided. Federal ownership and presence on the Hanford Site was planned in perpetuity (but for comparative analyses, loss of active institutional control was assumed to occur in the year 2150). It must be emphasized that this scenario was defined simply for

comparing alternatives. Present disposal practices with active administrative control will not result in the impacts calculated for this scenario.

The preferred alternative was developed following agency and public review of the draft EIS and consists of a combination of the reference alternative for some classes of waste and a deferred decision for other classes of waste. Under this alternative, readily retrievable waste (DST waste, strontium and cesium capsules, and retrievably stored and newly generated TRU waste) would be processed for geologic and grout disposal, and other waste would be left in place until results of ongoing or planned development and evaluation are obtained.

ROD: The ROD was approved in the FR, April 14, 1988 (53 FR 12449). It was decided to implement the "preferred alternative" as discussed in DOE/EIS-0113. Actions under the ROD were as follows:

- To proceed with the disposal activities for the following defense waste at the Hanford Site:
  - DST waste,
  - Retrievably stored and newly generated TRU waste,
  - The only pre-1970 buried suspect TRU-contaminated solid waste site outside the 200 Areas Plateau,
  - Strontium and cesium encapsulated waste.
- To process existing and future waste from the storage DSTs at the Hanford Site for final disposal, the DOE would design, construct, and operate the HWVP; complete the necessary pretreatment modifications and operate the pretreatment facility (planned to be the Hanford B Plant); and use the Hanford Site Transportable Grout Facility.
- The radioactive HLW fraction would be processed into a borosilicate glass waste form and stored at the HWVP until a geologic fraction would be solidified as a cement-based grout and disposed at the Hanford Site in near-surface, concrete-lined vaults.

- Existing and future DST waste would be characterized for hazardous chemical constituents, as well as other chemical constituents that could affect glass or grout formulation, before processing.

- The Waste Receiving and Processing Facility would be designed, constructed, and operated at the Hanford Site to sort, process, and repackage retrievably stored and newly generated TRU-contaminated solid waste for shipment to the WIPP located approximately 41.84 kilometers (26 miles) from Carlsbad, New Mexico. The only pre-1970 buried suspect TRU-contaminated solid waste site outside the Central Plateau would be removed to the 200 Areas Plateau for disposal as solid TRU waste.

- Encapsulated cesium and strontium waste would continue to be stored safely until a geologic repository was ready to receive this waste for disposal. Before shipment to a geologic repository, this waste would be packaged in accordance with repository waste acceptance specifications.

- For the remainder of the waste classes covered in the Hanford Defense Waste-EIS (DOE 1987) (SST waste, TRU-contaminated soil sites, and pre-1970 buried TRU-contaminated solid waste within the 200 Areas Plateau), the DOE had decided to conduct additional development and evaluation before making decisions on final disposal. This development and evaluation would focus on methods to retrieve and process this waste for disposal, as well as methods for stabilizing and isolating the waste stored near surface. Results from this work would be publicly available. Before decisions on final disposal of this waste, the alternatives would be analyzed in subsequent environmental documentation, including a supplement to the Hanford Defense Waste-EIS (DOE 1987) for decisions on disposal of the SST waste.

- There was one exception to waiting for the final disposal of SST waste, TRU-contaminated soil sites, and pre-1970 buried suspect soil sites. The exception was that to consolidate the waste, the DOE would proceed with exhuming and processing the only pre-1970 buried TRU-contaminated solid waste site (the 618-11 site) located outside the 200 Areas Plateau.

- For the pre-1970 buried TRU-contaminated solid waste and TRU-contaminated soil sites (except for the 618-11 site), the present remedial action program would continue.

Current Status: There have been three Supplement Analyses approved to support this EIS as follows:

1. Canister Storage Building (CSB) Foundation and Support Building (2704HV).

2. WRAP I

3. WRAP IIA

The Supplement Analysis (SA) for the CSB was approved to construct the facility for storage of High-level borosilicate log canisters. However, the current Hanford Site mission has identified additional programmatic uses for the CSB (e.g., storage of High-level glass log canisters; Low-level glass log canisters; WESF capsules; and K Basin spent nuclear fuel). Program interface has been initiated and is ongoing to evaluate the appropriate NEPA requirements for potentially multi-uses of the CSB. As of September, 1995, the re-evaluation of the purpose and need for the CSB is underway and no decision date has been determined.

A SA was prepared and approved to cover the construction and operation of the Waste Receiving and Processing Facility, Module 1 (Module 1). Module 1 would examine, process, repackage, and certify certain LH-TRU waste for shipment to WIPP that meets certain size and weight criteria. In December, 1992, a DOE decision was reached that the impacts of construction and operation of WRAP 1 were adequately covered in the HDW-EIS.

An SA was also prepared for WRAP 2A and a determination made that impacts of construction and operation were adequately covered in the HDW-EIS. The primary purpose of the WRAP 2A would be to handle LH-TRU mixed waste. As of September, 1995, there are no plans to construct and operate this facility.

****

DOE/EIS-0115D *Process Facility Modifications Project, Hanford Site, Richland, Washington,* draft canceled April 1986.

Background: This EIS proposed constructing and operating a segmentation and dissolution facility as a front end modification to the PUREX Facility at the Hanford Site. The PFMs would permit the recovery of plutonium from the irradiated FFTF fuel for use in DOE programs. The FFTF fuel would have been prepared in the

PFM for subsequent processing in the PUREX Facility. A corollary purpose was to provide an improved method of preparing irradiated fuel from the DOE's N Reactor (N-fuel) for processing in the PUREX Facility.

The proposed action also would have eliminated the current method of chemically decladding irradiated N-fuel, thereby reducing the volume of radioactive liquid waste and the potential environmental impacts of waste management at the Hanford Site. The PFM would not have been a standalone facility that produced a final end product; its function would have been to segment the fuel elements into short pieces from which the fuel could then be dissolved. The dissolved fuel solution would have been transferred to the PUREX Facility for separation and purification of the plutonium, uranium, and desired byproducts.

The proposed PFM capabilities would have included cask handling, fuel storage, fuel segmentation and dissolution, and handling of off gas and solid waste. Construction would have started in 1986. The PFM would have been operational in 1993. The EIS included discussion of the PFM facility and processes; quantities, composition, and disposition of process waste; the relationship of the PFM to the PUREX and UO_3 Facility operations and other facilities; and analysis of projected environmental impacts.

Alternatives: The alternatives discussed in this EIS were as follows:

- Preferred alternative: Construct and operate the PFM as a front end modification to the PUREX Facility.

- To construct and operate a smaller scale segmentation and dissolution facility adjacent to the Hanford Site PUREX Facility to process the FFTF fuel. During normal operations, the smaller scale PFM would have released gaseous and particulate emissions and solid waste. Radioactive liquid waste would have been routed to the PUREX Facility for treatment before disposal.

- To transport and process the FFTF fuel at the DOE Savannah River Site by providing modifications at the Savannah River Site to process the FFTF fuel. Although the quantities of radionuclides released would have been similar to the Hanford Site and Savannah River Site, the integrated 70-year whole body dose to an offsite individual of the population would have been higher at the Savannah River Site than at the Hanford Site. This higher dose would have occurred because the Savannah River Site population was larger and closer to

the site, and the pathways for radionuclides in liquid effluents to reach the population were more direct.

- To modify existing structures at the Hanford Site to process the FFTF fuel only. Processing, whether performed at the FMEF or at the PUREX Facility as modified by the PFM, would have required the same essential unit operations, and the environmental consequences would have been similar, except for higher radiation doses resulting from closer proximity of the population to the site.

- The no-action alternative would not have resulted in significantly different environmental effects from the proposed action or the alternatives, except that it lacked the benefits of reduced HLW and cladding removal waste.

Each of the alternatives to the proposed action would have continued to process N-fuel in the existing Hanford Site PUREX Facility, using the then-current operating chemical decladding process. The DOE's preferred alternative was the proposed action; only this action would have reduced the radioactive liquid waste volumes requiring storage in underground DSTs, while also recovering the plutonium from the FFTF fuel needed to satisfy national defense and R&D purposes.

Current Status: This draft was not finalized. This project has been canceled.

****

DOE/EIS-0119 *Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*, final, December 1992.

Background: This EIS provided environmental information to assist the DOE in the selection of a decommissioning alternative for the eight surplus production reactors at the Hanford Site (54 FR 18325). Nine water-cooled, graphite-moderated plutonium production reactors were constructed along the Columbia River at the Hanford Site between 1943 and 1963. Eight of these reactors (B, C, D, DR, F, H, KE, and KW) were retired from service and were available for decommissioning.

In 1980, the DOE approved an EA of the F Area Decommissioning Program, which addressed dismantling the F Reactor and disposal of radioactive materials in burial grounds in the 200 Areas of the Hanford Site. Four

alternatives were considered at that time: layaway, protective storage, entombment, and dismantling. Based on the EA, a FONSI for the dismantling alternative was published in the FR, August 22, 1980 (45 FR 56125).

The DOE then noted that it would be more appropriate to consider and implement a consolidated decommissioning program for all eight of the surplus production reactors at the Hanford Site, and decided to examine all reasonable decommissioning alternatives. Accordingly, on May 16, 1985, the DOE published a "Notice of Intent to Prepare an Environmental Impact Statement on Decommissioning the Eight Shutdown Production Reactors Located at the Hanford Site, Near Richland, Washington" in the 50 FR 20489. The scope of the draft EIS included only the disposition of the eight reactors, fuel storage basins, and the buildings housing these systems. To comply with the NEPA requirement for early preparation of environmental documentation, this draft EIS had been prepared before final engineering plans for decommissioning the reactors were available. As with any major action, it was expected that once a decommissioning alternative was selected, detailed engineering design would be carried out that could improve on the conceptual engineering plans presented. However, the engineering design would result in environmental impacts not significantly greater than those described here.

Alternatives: The alternatives discussed in this EIS were as follows.

- The preferred alternative was to demolish the reactor buildings and transport the reactor blocks in one piece by tractor-transport across the Hanford Site along a predetermined route to an onsite LLW burial area.

- The reactors would be temporarily stored in secure status for 75 years, after which the reactor buildings would be demolished and the reactor blocks transported in one piece by tractor-transport across the Hanford Site along a predetermined route to an onsite LLW burial area.

- The reactors would be temporarily stored in a safe, secure status for 75 years, after which they would be fully dismantled and any remaining radioactive waste would be transported to an LLW burial area on the Hanford Site.

- The reactors would remain at their present locations; contamination would be contained; major voids would be filled; potential pathways would be sealed; and an engineered mound of building rubble, earth, and gravel would be constructed over the decommissioned reactor to provide a long-term protective barrier against human intrusion, water infiltration, and water and wind erosion.

- The no-action alternative was that the reactors be left in place and the present maintenance and surveillance programs continue.

- Close the facilities and do nothing further. This alternative was neither responsible nor acceptable and was not considered further.

Current Status: The ROD was approved in 58 FR 48509 (September 1993). The DOE decided in favor of the preferred alternative; the reactor blocks for the Hanford Site's eight defunct plutonium reactors will be kept at their present sites until their radiation level lowers through natural decay and will then be buried. The DOE hopes to begin moving the reactor blocks without dismantling to the burial site on the Hanford Site's Central Plateau in approximately 75 years. The Hanford Site's B Reactor has since been included in the National Register of Historic Places and will likely remain in place and intact.

****

DOE/EIS-0189D* *Tank Waste Remediation System, Hanford Site, Richland, Washington*, draft.

Background: This EIS will analyze the potential environmental consequences related to the Hanford Site TWRS alternatives. These alternatives potentially could include retrieval, pretreatment, treatment, immobilization, and storage or disposal of radioactive, hazardous, and mixed waste. The waste is currently or projected to be stored in 177 underground storage tanks and approximately 40 miscellaneous underground storage tanks. The scope might also include management and disposal of 1,929 cesium and strontium capsules projected to be returned to or currently located on the Hanford Site.

Current Status: The draft EIS is being prepared. A Notice of Intent to prepare the EIS was published in the FR (59 FR 4052) January 28, 1994.

****

DOE/EIS-0203* *Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs,* final.

Background: This EIS considered the programmatic (DOE-wide) alternative approaches to safely, efficiently, and responsibly manage existing and projected quantities of spent nuclear fuel until the year 2035. DOE's spent nuclear fuel responsibilities include fuel generated by DOE production, research, and development reactors; naval reactors; domestic non-DOE reactors such as those at the National Institute of Standards and Technology and the Armed Forces Radiobiology Research Institute; and special- case commercial reactors such as Fort St. Vrain and the Lynchburg Technology Center.

DOE did not analyze the ultimate disposition (final step in which material is disposed of) of spent nuclear fuel in this EIS. Decisions regarding the actual disposition of DOE's spent nuclear fuel will follow appropriate review under the NEPA and be subject to licensing by the Nuclear Regulatory Commission.

DOE did not select spent nuclear fuel stabilization technologies on the basis of this EIS. These technology-based decisions are more appropriately dealt with on a fuel-type basis. DOE will conduct additional NEPA reviews for research and development, and characterization activities that help select technologies for placing the fuel in a form suitable for ultimate disposition.

Alternatives: DOE must provide for safe, efficient management of its spent nuclear fuel during the next 40 years, pending ultimate disposition. The alternatives considered are as follows:

- **No Action:** Take minimum actions required for safe and secure management of spent nuclear fuel at or close to the generation site or current storage location.
- **Decentralization:** Store most spent nuclear fuel at or close to the generation site or current storage location with limited shipments to DOE facilities.
- **1992/1993 Planning Basis:** Transport to and store newly generated spent nuclear fuel at the Idaho National Engineering Laboratory or Savannah River Site. Consolidate some existing fuels at the Idaho National Engineering Laboratory or the Savannah River Site.

- **Regionalization:** Distribute existing and projected spent nuclear fuel among DOE sites based primarily of fuel type or geography.

- **Centralization:** Manage all existing and projected spent nuclear fuel inventories from DOE and the Navy at one site until ultimate disposition.

Current Status: The ROD was issued June 1, 1995 (60 FR 28680).

The ROD includes a Department-wide decision to regionalize spent nuclear fuel management by fuel type for Department-owned spent nuclear fuel. The ROD also contains decisions dealing with site-wide environmental restoration and waste management programs at the Idaho National Engineering Laboratory.

Spent Nuclear Fuel Management. The DOE has decided to regionalize spent nuclear fuel management by fuel type at three sites: the Hanford Site, the Idaho National Engineering Laboratory and the Savannah River Site. Under this decision, the fuel type distribution would be as follows:

- Hanford production reactor fuel will remain at the Hanford Site;

- Aluminum clad fuel will be consolidated at the Savannah River Site; and

- Non-aluminum clad fuels (including spent nuclear fuel from the Fort St. Vrain Reactor and Naval spent fuel) will be transferred to the Idaho National Engineering Laboratory.

The Navy will resume shipments of its spent nuclear fuel to the Idaho National Engineering Laboratory immediately, upon the staying or dissolution of an injunction ordered by the United States District Court for the District of Idaho on May 19, 1995.

****

DOE/EIS-0212D* *Safe Interim Storage of Hanford Tank Wastes, Hanford Site, Richland, Washington*, draft.

Background: The DOE proposed to prepare the Safe Interim Storage (SIS)-EIS in response to the need, identified by DOE and Washington Department of Ecology (Ecology), to address near-term safety issues in the Hanford Site priority Watchlist tanks. The SIS-EIS would respond to the need to allow for continued safe operation of

facilities that generate waste on the Hanford Site to comply with existing regulations. Safety concerns regarding Watchlist tanks have been identified as the Priority 1 Hanford Site Tank Farm Safety Issues (Issues/situations that contain the most necessary conditions that could lead to worker or offsite radiation exposure through an uncontrolled release of fission products). The SIS-EIS considers alternatives for maintaining safe interim storage of Hanford Site tank waste types during the interim period prior to making and implementing decisions which will be the subject of analysis in the TWRS EIS.

Processing of reactor fuel for plutonium production and other waste management activities created a wide variety of radioactive and hazardous waste, some of which have been stored in underground tanks. The radioactive waste from various processes have been transferred among tanks so that chemical and physical characteristics of the waste types vary greatly among tanks and even within individual tanks. Typically, tank waste is highly radioactive and chemically hazardous.

On November 5, 1990, the U.S. Congress enacted Public Law 101-510, *Safety Measures for Waste Tanks at Hanford Nuclear Reservation,* of the National Defense Authorization Act for Fiscal 1991, which addresses safety issues concerning the handling of waste in Hanford Site tanks. In response to this legislation, DOE created the tank Watchlist which identified those tanks with potential safety concerns which warranted special attention. Safety issues have been prioritized by the DOE high-level Waste Tank Task Force.

DOE and Ecology have determined that the accumulation of high concentrations of flammable gas, principally hydrogen, occurring in Tank 101-SY constituted a safety problem of the highest priority. The mitigation of hydrogen production, pressure generation, and unacceptably high concentrations of flammable gas in this tank is a primary focus of the actions evaluated in this EIS. Additionally, the actions considered include alternative methods of waste transfer across the Hanford Site in support of mitigating safety issues.

Current Status: On July 21, 1994, the Manager-RL approved a draft EIS (DEIS) for public release. DOE Notice of Availability for the EIS was published in the Federal Register on August 19, 1994. Public comment meetings were held between August 30, 1994 and September 13, 1994. The Notice of Availability was published in the FR, August 2, 1994 (59 FR 39329). The final EIS is currently being developed, and should be issued in the fall of 1995.

****

DOE/EIS-0222D* *Hanford Remedial Action, Hanford Site, Richland, Washington*, draft.

Background: This EIS will be used to develop a coordinated strategy for remediation of hazardous and radioactive waste sites on the Hanford Site. This strategy would integrate potential future Hanford Site uses into remediation decisions. Adoption of this coordinated strategy would ensure that remediation goals for the Hanford Site are coordinated both with DOE's requirements for land and other resources needed for the remediation project and with the Hanford Site's other missions while protecting human health and the environment. Coordinating remediation goals for each geographic area of the Hanford Site into a coherent remediation strategy for the entire Hanford Site would minimize the likelihood of making inconsistent decisions at the operable unit level.

Alternatives: This EIS will analyze a No Action Alternative and a range of alternatives reflecting reasonable remediation strategies for the Hanford Site. The Hanford Site has been divided into four geographic areas for the purpose of analyzing impacts:

- The Columbia River,
- The Reactors on the River,
- The Central Plateau,
- All Other Areas.

The remediation strategies for these geographic areas are based on three broad categories of land uses that would be consistent with the nature and extent of any residual contamination remaining following remediation - unrestricted, restricted, and exclusive. These use categories serve as remediation goals representing the aggregate condition of each geographic area. Although portions of the Hanford Site are uncontaminated, the future uses of each geographic area would be determined by the amount of remediation that can be achieved at the waste sites rather than by the condition of the uncontaminated areas.

The Hanford Site has two additional geographic areas - the Fitzner/Eberhardt Arid Lands Ecology Reserve and North of the River. The Fitzner/Eberhardt Arid Lands Ecology Reserve and North of the River are scheduled for

remediation before the release of the ROD for this EIS and, therefore, are not addressed in the EIS.

The EIS will not select or recommend specific remediation technologies because decisions to deploy specific technologies would be made via the CERCLA/RCRA past-practice regulatory process.

Current Status: The draft EIS is in preparation. The scope of this action has been changed to include the Hanford Site Comprehensive Land Use Plan. The Implementation Plan was issued in June 1995. A Notice of Intent to prepare the EIS was published in the FR in August 21, 1992 (57 FR 37959).

****

DOE/EIS-0244D* *Plutonium Finishing Plant, 200 West Area, Hanford Site, Richland, Washington,* draft.

Background: The EIS will evaluate the potential impacts associated with the stabilization of plutonium-bearing materials at the Plutonium Finishing Plant (PFP). These materials have been grouped into four categories:

- Nitrate and chloride solutions,
- Oxides, fluorides, and process residues,
- Metals and alloys,
- Polycubes and combustibles.

Current Status: The EIS is being prepared. The Notice of Intent was published in the FR on October 27, 1994 (59 FR 53969).

****

DOE/EIS-0245D* *Management of Spent Nuclear Fuel From the K-Basins at the Hanford Site, Richland, Washington,* draft.

Background: This EIS will analyze the potential environmental consequences related to the management alternatives for Spent Nuclear Fuel (SNF) presently stored at the Hanford Site 100 K Area Basins. these alternatives could in addition to the No

Action Alternative include enhanced K Basin storage, new wet storage, new dry storage,a nd processing (domestic and foreign). The final range of alternatives in the EIS will be consistent with the Implementation Plan which is under development.

Approximately 2,100 metric tons of SNF are stored in water basins in the Hanford Site 100 K Area. The scope of the EIS will include a small inventory of SNF presently stored at PUREX and 100 N Area, as well as K Basin sludge, debris, and water.

Current Status: The draft EIS is being prepared. The NOI to prepare an environmental impact statement was published in the FR on March 3, 1995 (60 FR 15905).

This page intentionally left blank.

7.0 REFERENCES

45 FR 21676, 1980, "Surry Steam Generator Project Environmental Assessment," *Federal Register*, April 2.

45 FR 46155, 1980, "Double-Shell Tanks for Defense High-Level Radioactive Waste Storage, Hanford Site, Richland, Washington," *Federal Register*, July 9.

45 FR 56125, 1980, "Finding of No Significant Impact, 100 F-Area Decommissioning Program; Hanford Site," *Federal Register*, August 22.

46 FR 26677, 1981, "Program of Research and Development for Management and Disposal of Commercially Generated Radioactive Wastes; Record of Decision," *Federal Register*, May 14.

47 FR 36276, 1982, "Record of Decision to Decommission the Shippingport Atomic Power Station," *Federal Register*, August 19.

47 FR 40820, 1982, "Finding of No Significant Impact and Notice of Availability of Environmental Assessment for the Conduct of Detailed Site Through Construction of an Exploratory Shaft on t Hanford Site," *Federal Register*, September 16.

48 FR 21993, 1983, "Record of Decision to Resume Operation of Purex and Uranium Oxide Plant Facilities; Hanford Site, Richland, Washington," *Federal Register*, May 16.

50 FR 20489, 1985, "Notice of Intent to Prepare an Environmental Impact Statement on Decommissioning the Eight Shutdown Production Reactors Located at the Hanford Site Near Richland, Washington," *Federal Register*, May 16.

53 FR 12449, 1988, "Disposal of Hanford Defense High-Level, Transuranic, and Tank Wastes, Hanford Site, Richland, Washington; Record of Decision (ROD)," *Federal Register*, April 14.

53 FR 50444, 1988, "Proposed Finding of No Significant Impact; SP-100 GES Test Site; Hanford Site, Richland, Washington," *Federal Register*, December 15.

54 FR 18325, 1989, "Availability of Draft Environmental Impact Statement on Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington," *Federal Register*, April 28.

54 FR 39564, 1989, "Finding of No Significant Impact; SP-100 GES Test, Hanford Site, Richland, Washington," *Federal Register*, September 27.

57 FR 37959, "Intent To Prepare the Hanford Remedial Action Environmental Impact Statement, Richland, Washington," ACTION: Notice of intent to prepare an environmental impact statement and to conduct public scoping meetings, *Federal Register*, August 21, 1992.

58 FR 48509, 1993, "Eight Surplus Production Reactors Decommissioning; Hanford Site, Richland, Washington," Final Environmental Impact Statement, *Federal Register*, September 16, 1993.

59 FR 60358, 1994, "Availability of Draft Environmental Impact Statement on Plutonium Finishing Plant Complex, Deactivation at the Hanford Site, Richland, Washington," *Federal Register.*

59 FR 53969, 1994, "Availability of Draft Environmental Impact Statement on Plutonium Finishing Plant Complex, Plutonium-Bearing Materials Stabilization and Stabilized Material Storage at the Hanford Site, Richland, Washington," *Federal Register.*

59 FR 4052, 1994, "Intent To Prepare Hanford Tank Waste Remediation System Environmental Impact Statements, Richland, Washington," ACTION: Notice of Intent (NOI) to prepare two Environmental Impact Statements (EISs) for proposed actions at the Hanford Site, Richland, Washington. One EIS would address the proposed Tank Waste Remediation System (TWRS) activities, and the second would address the proposed construction of six new tanks for the storage of high-level radioactive waste as an interim action to the TWRS EIS., *Federal Register*, Friday, January 28, 1994,

59 FR 39329, "Draft Environmental Impact Statement for the Safe Interim Storage of Hanford Tank Wastes at the Hanford Site, Richland, Washington, and Announcement of Public Hearings," *Federal Register*, Tuesday, August 2, 1994. ACTION: Notice of availability.

59 FR 32688, "Draft Environmental Impact Statement for Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs; and Announcement of Public Hearings," *Federal Register*, Friday, June 24, 1994, ACTION: Notice of availability.

60 FR 15905, "Availability of Draft Environmental Impact Statement, K Basins' Spent Nuclear Fuel Management at the Hanford Site, Richland, Washington," *Federal Register*, Tuesday, March 28, 1995.

60 FR 20979, "Final Environmental Impact Statement for Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs," ACTION: Notice of Availability., *Federal Register*, Friday, April 28, 1995,

60 FR 28680, "Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs, Part III," ACTION: Record of Decision, *Federal Register*, Thursday, June 1, 1995.

Chatters, J. C., and N. A. Cadoret, 1990, *Archaeological Survey of the 200 East and 200 West Areas, Hanford Site, Washington*, PNL-7264, Pacific Northwest Laboratory, Richland, Washington.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601 et seq.

DOE, 1987, *Final Environmental Impact Statement: Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes, Hanford Site, Richland, Washington*, 5 vols, DOE/EIS-0113, U.S. Department of Energy, Washington, D.C.

DOE, 1988, *Environment, Safety, and Health Program for Department of Energy Operations for Richland Operations*, DOE Order 5480.1A, U.S. Department of Energy, Washington, D.C.

Ecology, EPA, and DOE, 1992, *Hanford Federal Facility Agreement and Consent Order*, as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

National Environmental Policy Act of 1969, 42 USC 4321 et seq.

Nuclear Waste Policy Act of 1982, 42 USC 10101 et seq.

Resource Conservation and Recovery Act of 1976, 42 USC 6901 et seq.

DISTRIBUTION

Number of copies		
OFFSITE		
1	U.S. Department of Energy Headquarters, Washington D.C.	
	E. B. Cohen	Room 3E-080 Forrestal Bldg.
ONSITE		
15	U.S. Department of Energy, Richland Operations Office	
	B. F. Burton	T5-50
	R. M. Carosino	A4-52
	S. S. Clark	S7-41
	P. F. X. Dunigan, Jr. (7)	A5-15
	T. W. Ferns	H4-83
	C. C. Haass	S7-51
	A. L. Rodriguez	A5-15
	P. S. Kube	A5-15
	A. E. Teimouri	A5-15
4	Bechtel Hanford, Inc.	
	K. A. Gano	H6-02
	L. A. Mihalik	H4-79
	W. L. Pamplin	H6-07
	Environmental Resource Center	H6-07
1	Boeing Computer Services	
	D. J. Farquhar	A1-05
2	ICF Kaiser, Hanford	
	B. J. Dixon	B4-20
	R. E. Morgan	B4-20

DISTRIBUTION (cont.)

1	MACTEC	
	D. J. Guzzetta	B1-42
16	Pacific Northwest Laboratory	
	C. D. Becker	K6-85
	D. S. Broussard	K1-67
	S. R. Cassidy	K7-74
	M. L. Clark	K2-18
	C. E. Cushing	K6-85
	B. A. Grasher	K3-14
	T. P. Hanrahan	P7-79
	K. L. Hoewing	K1-59
	J. J. Long	K6-48
	E. B. Moore	K6-03
	I. C. Nelson	K3-54
	R. G. Parkhurst	K6-78
	R. C. Phillips	P7-79
	J. A. Seidel	P7-63
	M. H. Schlender	K6-25
	NEPA Library Copy	P7-79
37	Westinghouse Hanford Company	
	L. E. Borneman	R2-06
	D. M. Busche	B1-17
	M. P. Campbell	R1-52
	S. E. Campbell	T4-05
	J. L. Demarest	G1-20
	G. T. Dukelow	S7-15
	R. H. Engelmann	H6-26
	D. L. Flyckt	S6-71
	M. S. Gerber	N1-40
	M. J. Hall	T6-12
	P. K. Hoeft	T5-54
	D. A. Kane (3)	H6-26
	S. E. Killoy	S6-70

DISTRIBUTION (cont.)

ONSITE

Westinghouse Hanford Company (cont.)

J. M. Kisielnicki	L6-13
G. J. LeBaron	S6-19
C. E. Marple	S2-51
D. J. McBride	T5-54
P. C. Miller	N2-57
G. C. Mooers	R3-11
S. E. Myers	N3-06
V. J. Panesko	H6-33
R. D. Pierce	T3-04
A. D. Poor	L6-55
D. E. Rasmussen	N1-47
E. A. Schultz	B3-75
R. W. Szelmeczka	L6-05
S. R. Tifft	H6-26
G. C. Triner	T3-28
J. E. Turnbaugh	H6-21
D. J. Watson	X3-79
G. T. Wells	H6-26
B. D. Williamson	B3-15
B. D. Zimmerman	H6-33
OSTI (2)	L8-07
Central Files	L8-04