



2.2 COMPLIANCE STATUS

J. P. Duncan

This section summarizes the status of Hanford Site activities with regard to federal environmental protection statutes and associated state and local environmental regulations. Permits required under specific environmental protection regulations are discussed.

2.2.1 HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

R. D. Morrison

The Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement; Ecology et al. 1998) commits DOE to achieve compliance with the remedial action provisions of CERCLA and with the treatment, storage, and disposal unit regulations and corrective action provisions of RCRA, including the state's implementing regulations. From 1989 through 2002, a total of 773 milestones and 274 target dates have been completed. During 2002, there were 40 specific cleanup milestones scheduled for completion: 36 were completed on or before their required due dates, 2 were completed beyond their established due dates, and 2 are yet to be completed.

2.2.1.1 TRI-PARTY AGREEMENT MILESTONES

The Tri-Party Agreement is an agreement for achieving compliance with CERCLA remedial action provisions and with RCRA treatment, storage, and disposal unit regulations and corrective action provisions. The Tri-Party Agreement contains a schedule, using numerous enforceable major and interim milestones, which reflects a concerted goal of achieving full regulatory compliance and remediation.

The following list contains the calendar year 2002 milestones completed under the terms of the Tri-Party Agreement:

- **M-013-00M** – Submit one 200 National Priority List remedial investigation/feasibility study work plan for the 200-IS-1 tanks/lines/pits/diversion boxes operable unit. Includes waste sites in the 200-ST-1 Operable Unit.
- **M-015-41B** – Submit 200-TW-1 and 200-TW-2 Operable Units remedial investigation report to EPA and Washington State Department of Ecology and include the past-practice waste sites in the 200-PW-5 fission product-rich process waste group.
- **M-016-03A** – Establish date for completion of 300 Area remedial actions.
- **M-016-03G** – Establish an Environmental Restoration Disposal Facility staging area that is ready to receive drummed waste from the 618-4 burial ground in accordance with an Environmental Restoration Disposal Facility record of decision amendment.
- **M-016-26B** – Complete remediation and backfill of 51 liquid waste sites in the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2 and 100-HR-1 Operable Units and process effluent pipelines in the 100-DR-1, 100-DR-2, and 100-HR-1 Operable Units. Complete revegetation of 36 liquid waste sites in the 100-BC-1, 100-DR-1, 100-DR-2, and 100-HR-1 Operable Units as defined in the remedial design report/remedial action work plan for the 100 Areas (DOE/RL-96-17).
- **M-016-41B** – Submit closeout verification package for J.A. Jones 1 and 600-23 waste sites for EPA approval.
- **M-019-00** – Complete treatment and/or direct disposal of at least 1,644 cubic meters (2,150 cubic yards) of contact-handled low-level mixed waste already in storage as of October 1, 1995, as well as newly generated Hanford Site low-level mixed waste.
- **M-023-23** – Submit a document that defines leak detection and monitoring functions and requirements for single-shell tank systems to Washington State Department of Ecology for approval.

- **M-023-24** – Submit single-shell tank system integrity assessment report and associated certification(s) and determination(s) pursuant to 40 CFR 265, Subpart J. This report shall document and assess the integrity of DOE's single-shell tank system pursuant to the requirements of 40 CFR 265, Subpart J.
- **M-023-25A** – Complete installation of the first four liquid observation wells and begin weekly liquid observation monitoring at four single-shell tanks by March 31, 2002.
- **M-023-25B** – Complete installation of the second four liquid observation wells and begin weekly liquid observation monitoring at four single-shell tanks by September 30, 2002.
- **M-024-00N** – Install RCRA groundwater monitoring wells at the rate of 29 in calendar year 1989, 30 in calendar year 1990, and up to 50 per year thereafter as specified by agreed interim milestones until all land disposal units and single-shell tanks are determined to have RCRA-compliant monitoring systems.
- **M-024-56** – Install two additional wells at single-shell tank Waste Management Area TX-TY. Location 1: well installed downgradient (perimeter) between wells 299-W14-6 and 299-W14-14. Location 2: well installed ~55 meters (~180 feet) south of well 299-W15-22. Water quality screening as described above with standard-design top-of-table well completion.
- **M-026-01L** – Submit an annual Hanford Land Disposal Restrictions Report in accordance with Tri-Party Agreement requirements to cover the period from January 1 of the previous year through December 31 of the reporting year.
- **M-034-17** – Initiate removal of spent nuclear fuel from the K-East Basin and transport to the K-West Basin.
- **M-035-09C** – Conduct biennial assessments of information and data access needs with EPA and Washington State Department of Ecology. DOE will propose implementation schedules (Tri-Party Agreement milestones) for enhancements as a result of the biennial assessments.
- **M-043-15** – Start construction for upgrades in the AW Tank Farm.
- **M-044-00A** – Complete delivery of information requirements as identified in the annually submitted Waste Information Requirements Document.
- **M-044-15F** – Complete characterization deliverables consistent with Waste Information Requirements Document developed for 2000. Reporting on progress of these deliverables will be done in quarterly reports due at the end of the month following each fiscal year quarter. The fourth quarter report due at the end of October will also include a year-end summary of all deliverables due for the fiscal year.
- **M-044-16F** – Complete input of characterization information for high-level waste tanks for which sampling and analysis were completed per Waste Information Requirements Document into an electronic database. Offsite access to the database containing tank waste characterization information will be made available to EPA and Washington State Department of Ecology.
- **M-045-00C** – Complete re-negotiation of second phase activities (i.e., September 30, 2006 through September 30, 2015) for the single-shell tank waste retrieval.
- **M-045-02K** – Submit annual update of single-shell tank retrieval sequence document.
- **M-046-00I** – This new milestone replaces existing milestone M-31-02. A tank volume projection report shall be submitted on an annual basis to the Washington State Department of Ecology and EPA. This report shall include discussions covering all assumptions which form the basis of the projection. The report shall include or shall be accompanied by DOE's plans for acquisition of additional tanks based on the tank volume projection.
- **M-046-01H** – Concurrence of additional tank acquisition. The three parties shall meet to establish new milestones, if required, for acquisition of additional tanks.
- **M-048-02D** – Submit to the Washington State Department of Ecology a report assessing technology development by March 31, 2002. Develop ultrasonic testing equipment, or an equivalent technology, to assess material thickness and defects of the predicted maximum stress region of the lower knuckle base metal of double-shell tanks.
- **M-048-02E** – Submit to the Washington State Department of Ecology a report assessing technology development by September 30, 2002. Develop ultrasonic testing equipment, or an equivalent technology, to assess material thickness and defects of the predicted maximum stress region of the lower knuckle base metal of double-shell tanks.
- **M-048-10** – Submit a written report to the Washington State Department of Ecology documenting results of ultrasonic testing of the primary tank walls in four double-shell tanks not previously examined by ultrasonic testing.
- **M-062-01E** – Submit semiannual project compliance report.
- **M-062-06** – Start construction of Phase I Treatment Complex. First placement of structural concrete at one of the treatment complex principal facilities (i.e., pretreatment, low-activity waste vitrification, or high-level waste vitrification facilities).
- **M-083-09** – Complete repackaging and shipment of all Hanford ash mixed waste currently stored in the Plutonium

Finishing Plant to the Central Waste Complex for storage. Repackaging and shipment of Hanford ash mixed waste does not include those items identified as non-destructive assay standards or set aside for Waste Isolation Pilot Plant verification sampling.

- **M-083-10** – Complete solidification of selected plutonium-bearing solutions currently located in the Plutonium Finishing Plant and shipment to the Central Waste Complex for storage.
- **M-083-21** – Submit a residual chemical hazards assessment for the Plutonium Finishing Plant to the Washington State Department of Ecology as a primary document. The document will list the processing equipment including tanks, piping, and waste lines that may contain residual chemicals and an evaluation of the associated hazards. The document will describe the evaluation, criteria, and processes to accomplish these tasks. It will also categorize the items based on risk to human health and the environment, include considerations on whether response actions are required, and provide a schedule for actions necessary to address significant risks prior to final deactivation. The methods for defining the categories will be described in the document.
- **M-092-14** – Complete removal, transfer, and initiate storage of Phase I 300 Area special case waste and materials. Phase I inventory will consist of, at minimum, one-third the total curie content of all 300 Area special case waste.
- **M-093-06** – Complete removal action work plan/surveillance and maintenance plan for B Reactor.
- **M-093-13** – Initiate characterization and design of interim safe storage for the DR Reactor.
- **M-094-02** – Submit an amendment to the existing 324 Building Radiochemical Engineering Cells, High-Level Vault closure plan (DOE/RL-96-73) for Washington State Department of Ecology review and approval. The amendment shall change the existing closure plan path from clean closure to a path where the high-risk materials and waste are removed from the facility followed by complete disposition.

Milestones completed after their established due dates in 2002 under the terms of the Tri-Party Agreement include the following items:

- **M-034-18A** – Complete removal of spent nuclear fuel equivalent to 957 metric tons (1,053 tons) heavy metal from the K-West Basin. This interim milestone will be complete when spent nuclear fuel equivalent to 957 metric tons (1,053 tons) heavy metal has been removed from K-West Basin and transported to the Cold Vacuum Drying Facility.

- **M-034-29** – Complete K-East and K-West Basin facility modifications for an alternate fuel transfer strategy.

Milestones not completed in 2002 under the terms of the Tri-Party Agreement include the following two items:

- **M-034-08** – Initiate full-scale K-East Basin sludge removal. DOE shall complete and approve K-East sludge removal definitive design documents, all associated construction, and readiness assessments, and initiate removal of sludge from the basin.
- **M-091-20** – Prepare T Plant to receive the first canister of K Basins floor and pit sludge. This interim milestone will be complete when all T Plant readiness activities have been completed to accept pit and floor sludge. Readiness is defined as the issuance of the readiness to proceed letter by the approval authority.

2.2.1.2 APPROVED MODIFICATIONS TO THE TRI-PARTY AGREEMENT

During 2002, twenty-five negotiated change requests to the Tri-Party Agreement were approved (Table 2.2.1). These approved change requests may be viewed in their entirety in the Tri-Party Agreement Administrative Record at <http://www2.hanford.gov/arpit/>.

2.2.2 ENVIRONMENTAL MANAGEMENT SYSTEMS

H. T. Tilden II, G. D. Cummins, and D. M. Yasek

Contractors at the Hanford Site have established integrated environment, safety, and health management systems. These systems, contractually mandated by DOE, are intended to protect the worker, public, and environment by integrating environment, safety, and health into the way work is planned, performed, and improved. The international voluntary consensus standard ISO 14001, *Environmental Management Systems – Specifications with Guidance for Use*, and DOE P 450.4, *Safety Management System Policy*, were used during the development of the systems. Basic elements of these systems include environmental policy, planning, implementation, checking and corrective action, and management review.

Table 2.2.1. Hanford Site Tri-Party Agreement Change Requests Approved During 2002

<u>Change Request</u>	<u>Date Approved</u>	<u>Title</u>
M-13-02-01	06/05/02	Modification of Central Plateau 200 Areas non-tank farm remedial action work plans (M-013 series milestones)
M-15-01-03	09/11/02	Interim milestones for 200-LW-1
M-15-01-04	07/12/02	Interim milestones for 200-MW-01 miscellaneous waste group operable unit remedial investigation/feasibility study work plan
M-15-02-01	06/05/02	Modify Tri-Party Agreement milestone series M-015 in accordance with the Central Plateau Agreement in Principle
M-16-01-05	04/30/02	Establish date for completion of all 100 Areas remedial actions (M-016-00F)
M-16-01-06	04/30/02	Establish date for completion of all 300 Area remedial actions
M-16-02-01	06/05/02	Modification of the M-016 series milestones
M-16-02-02	07/11/02	Modify in situ redox manipulation phase III barrier emplacement interim milestone M-016-27C
M-16-02-04	11/13/02	Additional extraction well and monitoring well for 100-KR-4 pump-and-treat system
M-20-01-01	06/03/02	Modify Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) M-020 series milestones
M-20-02-01	06/05/02	Modify Tri-Party Agreement milestone series M-020 in accordance with the Central Plateau Agreement in Principle
M-23-02-01	02/26/02	Modifications to the M-23-23 milestone
M-24-02-01	09/24/02	Define <i>Resource Conservation and Recovery Act</i> wells to be drilled in 2002
M-34-02-01	06/11/02	Measurement of spent nuclear fuel from K-West Basin changes from multi-canister overpack to metric tons of heavy metal
M-34-02-02	07/23/02	M-34-17 - deletion of requirement for initiation of sludge containerization
M-45-02-01	02/11/02	Change in delivery dates for M-045-55-T02 and M-045-55-T03
M-45-02-04	10/30/02	Re-align completion date for Tri-Party Agreement Target M-045-55-T03
M-45-02-05	12/17/02	Modification of M-45-05D to allow time to finalize M-45-02-03
M-46-02-01	11/25/02	Change due date of M-046-01I "Concurrence of additional tank acquisition. The three parties shall meet to establish new milestones, if required, for acquisition of additional tanks." from November 30, 2002 to February 28, 2003
M-62-01-03	06/03/02	Modifications to the M-062-06, M-062-07, M-062-10 M-062-11, M-4500C, M-090-08, M-090-09-T01, and M-90-11 milestones that are necessary to provide consistency between Tri-Party Agreement milestone language, completion schedule for contract numbers DE-AC27-01RV14136, DE-AC27-99R114047, and DOE Office of River Protection baseline schedule
M-83-01-03	10/29/02	Establish milestones and target dates for the Plutonium Finishing Plant transition, milestone series M-83A
M-90-01-03	06/03/02	Modification of Tri-Party Agreement M-90 series to resolve inconsistencies between Tri-Party Agreement requirements and the DOE Office of River Protection baseline schedule
M-93-01-02	04/30/02	Modification to the Tri-Party Agreement M-93 series milestones complete final disposition of all 100 Areas surplus production reactor buildings
M-94-01-01	04/30/02	Establish date for final disposition of all 300 Area surplus facilities under the M-094 series milestones
P-06-02-01	05/21/02	Quality assurance sections of the Tri-Party Agreement

DOE has verified the following Hanford contractors as having adequately implemented an integrated environmental, safety, and health system: Bechtel Hanford, Inc. (May 2000), CH2M HILL Hanford Group, Inc. (May 2000), Fluor Hanford, Inc. (August 2000), and the Pacific Northwest National Laboratory (1998). Efforts continued in 2002 to implement and improve these environmental, safety, and health programs. The Pacific Northwest National Laboratory obtained ISO 14001 third-party registration of its Environmental Management System in 2002. The registration certificate can be viewed online at <http://www.pnl.gov/iso14001/registration.htm>. Bechtel Hanford, Inc. is pursuing ISO 14001 registration through either self-certification to the standard or certification by third-party registrars. During 2002, Bechtel Hanford, Inc. implemented performance measures and indicators to monitor the health function of their Integrated Safety Management System (BHI-01550). The performance measures encompass all of the Integrated Safety Management System core functions and guiding principles. Bechtel Hanford, Inc. found that the ability to effectively monitor the critical performance measures and indicators associated with each of these core functions enabled management to stay current with efforts to maintain and sustain Integrated Safety Management System and established a basis to evaluate and balance priorities.

2.2.3 CHEMICAL MANAGEMENT SYSTEMS

M. T. Jansky

The Hanford Site, through its contractors, facilities, and processes, uses a variety of approaches for chemical management. The contractors developed and documented formal systems for the management of chemicals during 1997. These management systems are applicable to the acquisition, use, storage, transportation, and final disposition of chemicals including hazardous chemicals as defined in the Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910, Subpart Z, Appendices A and B). The chemical management systems have been reviewed periodically and improved as needed. Details on the chemical inventories stored at the Hanford Site may be found in Section 2.5.

2.2.4 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

L. M. Dittmer

During 1980, the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) was enacted to address response, compensation, and liability for past releases or potential releases of hazardous substances, pollutants, and contaminants to the environment. During 1986, CERCLA was extensively amended by the *Superfund Amendments and Reauthorization Act*, which made federal facilities subject to the provisions of CERCLA. EPA is the lead regulatory agency responsible for oversight of DOE's implementation of CERCLA. There is significant overlap between the state RCRA corrective action program (Section 2.2.6) and CERCLA. Many waste management units are subject to remediation under both programs. The CERCLA program is implemented via 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," which establishes procedures for characterization, evaluation, and remediation. The Tri-Party Agreement addresses CERCLA implementation at Hanford and is generally consistent with the national contingency plan process.

There are several remediation activities under way at Hanford that are accomplished using the CERCLA process (e.g., remedial investigation in the 200 Areas, cleanup in the 100 and 300 Areas). Specific project activities and accomplishments are described in Sections 2.3.2 and 2.3.12.

2.2.5 EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

D. E. Zaloudek

The *Emergency Planning and Community Right-to-Know Act* requires states to establish a state emergency response commission and local emergency planning committees

and to develop a process to distribute information on hazardous chemicals present in facilities. These organizations gather information and develop emergency plans for local planning districts. Facilities that produce, use, or store extremely hazardous substances in quantities above threshold planning quantities must identify themselves to the state emergency response commission and the local emergency planning committee, and periodically provide information to support the emergency planning process. Facilities must also notify the state emergency response commission and the local emergency planning committee immediately after an accidental release of an extremely hazardous substance (40 CFR 355, Appendices A and B) over the reportable quantity. Two annual reports are required by the *Emergency Planning and Community Right-To-Know Act*. The 2002 *Hanford Site Tier Two Emergency and Hazardous Chemical Inventory* (DOE/RL-2003-07) contains information about hazardous chemicals stored at the facility in amounts exceeding minimum threshold levels. The 2002 *Hanford Site Toxic Chemical Release Inventory* (DOE/RL-2003-18) contains information about total annual releases of certain toxic chemicals and associated waste management activities.

For reporting year 2002, the Hanford Site issued the reports and notifications required by the *Emergency Planning and Community Right-To-Know Act*. The 2002 *Hanford Site Tier Two Emergency and Hazardous Chemical Inventory* (DOE/RL-2003-07) was provided to the Washington State Department of Ecology's Community Right-To-Know Unit; local emergency planning committees for

Benton, Franklin, and Grant Counties; and to both the Richland and Hanford Site fire departments. The 2002 *Hanford Site Toxic Chemical Release Inventory* report (DOE/RL-2003-18), which included releases and waste management activities involving lead, was provided to EPA and the Washington State Department of Ecology.

Table 2.2.2 provides an overview of 2002 reporting under the *Emergency Planning and Community Right-To-Know Act*.

2.2.6 RESOURCE CONSERVATION AND RECOVERY ACT

M. J. Hartman

The *Resource Conservation and Recovery Act* (RCRA) was enacted during 1976 with the objective of protecting human health and the environment. During 1984, the Hazardous and Solid Waste Amendments re-authorized RCRA and imposed new requirements on the management of hazardous waste. The most important aspect of RCRA is its establishment of "cradle-to-grave" management to track hazardous waste from generator to treatment, storage, and disposal. The Washington State Department of Ecology has the authority to enforce RCRA requirements in the state. At Hanford, RCRA applies to ~70 hazardous waste treatment, storage, or disposal units that have received waste since implementation of the act.

Table 2.2.2. Emergency Planning and Community Right-to-Know Act Compliance Reporting at the Hanford Site During 2002

<u>Sections of the Act</u>	<u>Yes^(a)</u>	<u>No^(a)</u>	<u>Not Required^(a)</u>
302-303: Planning notification	X ^(b)		
304: Extremely hazardous substances release notification			X
311-312: Material safety data sheet/chemical inventory	X		
313: Toxic chemical release inventory reporting	X		

(a) "Yes" indicates that notifications were provided and/or reports were issued under the applicable provisions. "No" indicates that notifications or reports should have been provided but were not. "Not Required" indicates that no actions were required under the applicable provisions, either because triggering thresholds were not exceeded or no releases occurred.

(b) These notifications apply to the Hanford Site but were completed prior to 2002.

2.2.6.1 HANFORD FACILITY RCRA PERMIT

S. A. Thompson

The Hanford Facility RCRA Permit (WA7890008967), Dangerous Waste Portion was issued by the Washington State Department of Ecology during September 1994. The permit is the foundation for RCRA permitting on the Hanford Site in accordance with provisions of the Tri-Party Agreement (Ecology et al. 1998). Revision 8 of the Hanford Facility RCRA Permit is scheduled to be published in April 2003.

2.2.6.2 RCRA/DANGEROUS WASTE PERMIT APPLICATIONS AND CLOSURE PLANS

S. A. Thompson

For purposes of RCRA and Washington State dangerous waste regulations (WAC 173-303), the Hanford Site is considered a single facility that encompasses ~70 treatment, storage, and disposal units. The Tri-Party Agreement recognized that all of the units could not be issued permits simultaneously, and a schedule was established to submit unit-specific Part B dangerous waste permit applications and closure plans (DOE/RL-88-20) to the Washington State Department of Ecology.

During 2002, 24 Part A, Form 3, revisions were certified and submitted to the Washington State Department of Ecology. One Part B permit application (DOE/RL-88-20) (Low-Level Burial Grounds) for final status was submitted to the Washington State Department of Ecology.

2.2.6.3 RCRA GROUNDWATER MONITORING

M. J. Hartman and B. A. Williams

RCRA groundwater monitoring is part of the Hanford Site Groundwater Monitoring Project (Section 6.2). Table 2.2.3 lists the 24 facilities and units (or waste management areas) that require groundwater monitoring and notes their monitoring status, and Figure 6.1.3 shows the locations of these units. RCRA samples were collected from 285 wells site-wide during 2002. A summary of

groundwater monitoring activities for these sites during 2002 is provided in Section 6.4.

Groundwater samples were analyzed for a variety of dangerous waste constituents and site-specific constituents. The constituent lists meet the minimum RCRA regulatory requirements and are integrated to supplement other groundwater monitoring project requirements (e.g., *Atomic Energy Act of 1954*, CERCLA) at the Hanford Site.

DOE and Washington State Department of Ecology negotiations resulted in an agreement to install four wells, two RCRA and two CERCLA, during the fourth quarter of 2002. The agreement required one new CERCLA well to be installed in support of the 200-ZP-1 Operable Unit and one new well installed to support the 200-UP-1 Operable Unit. Additionally, Tri-Party Agreement Milestone M-24-00N (Ecology et al. 1998) required the installation of two new RCRA groundwater monitoring wells by December 31, 2002. Fluor Hanford, Inc. successfully installed these two wells ahead of the completion deadline (Table 2.2.4). Both of these RCRA wells were installed at Waste Management Area TX-TY, located in the 200-West Area. The wells were completed as shallow (top of the aquifer) monitoring wells, with well screens ~10.7 meters (35 feet) long.

DOE's Cleanup, Constraints, and Challenges Team was formed during 2002 to assess and define the total number of groundwater monitoring wells required to complete and/or integrate all the monitoring networks on the Central Plateau. The result of this work was an integrated CERCLA/RCRA data quality objectives document that is pending approval by the Tri-Parties. The document identifies all of the 200 Areas groundwater monitoring wells required to fulfill RCRA and CERCLA monitoring requirements. If approved, the Tri-Parties will prioritize these wells and schedule them for installation from 2003 through 2006. The wells to be installed annually will continue to be approved via the Tri-Party Agreement (Milestone M-24-00).

No major changes to RCRA facility groundwater monitoring occurred during 2002 at the waste management units. At the end of 2002, 15 RCRA waste management areas were monitored to detect whether they are contaminating groundwater with hazardous constituents. Seven waste management areas were monitored to assess the

Table 2.2.3. RCRA Interim and Final Status Groundwater Monitoring Projects at the Hanford Site, September 2002

TSD Units, date initiated	Interim Status TSD Unit Groundwater Monitoring		Final Status TSD Unit Groundwater Monitoring			Groundwater Monitoring Regulations	Calendar Year Scheduled for Part B ^(b) or Closure
	Indicator Parameter Evaluation ^(a)	Groundwater Quality Assessment, date initiated	Detection Evaluation	Compliance Evaluation	Corrective Action, date initiated		
116-N-1 (1301-N) LWDF, December 1987			X ^(c)			40 CFR 265.93(b) WAC 173-303-400	1999 ^(d)
120-N-1, 120-N-2 (1324-N/NA) LWDF, December 1987			X ^(c)			40 CFR 265.93(b) WAC 173-303-400	1999 ^(d)
116-N-3 (1325-N) LWDF, December 1987			X ^(c)			40 CFR 265.93(b) WAC 173-303-400	1999 ^(d)
116-H-6 (183-H) evaporation basins, June 1985					X, 1998	40 CFR 264 WAC 173-303-645(11)	1994 ^(d)
216-A-29 ditch, November 1988	X					40 CFR 265.93(b) WAC 173-303-400	2005 ^(d)
216-B-3 pond, November 1988	X ^(e)					40 CFR 265.93(b) WAC 173-303-400	2003 ^(d)
216-B-63 trench, August 1991	X					40 CFR 265.93(b) WAC 173-303-400	2005 ^(d)
216-S-10 pond and ditch, August 1991	X					40 CFR 265.93(b) WAC 173-303-400	2005 ^(d)
216-U-12 crib, September 1991		X, 1993				40 CFR 265.93(d) WAC 173-303-400	2005 ^(d)
316-5 process trenches, June 1985					X, ^(e) 1998	40 CFR 264 WAC 173-303-645(11)	1996 ^(d,f)
LERF, July 1991						40 CFR 265.93(b) WAC 173-303-400	1998 ^(g)
LLWMA 1, September 1988	X					40 CFR 265.93(b) WAC 173-303-400	2002 ^(h)

Table 2.2.3. (contd)

TSD Units, date initiated	Interim Status TSD Unit Groundwater Monitoring		Final Status TSD Unit Groundwater Monitoring			Groundwater Monitoring Regulations	Calendar Year Scheduled for Part B ^(b) or Closure
	Indicator Parameter Evaluation ^(a)	Groundwater Quality Assessment, date initiated	Detection Evaluation	Compliance Evaluation	Corrective Action, date initiated		
LLWMA 2, September 1988	X					40 CFR 265.93(b) WAC 173-303-400	2002 ^(h)
LLWMA 3, October 1988	X					40 CFR 265.93(b) WAC 173-303-400	2002 ^(h)
◆ LLWMA 4, October 1988	X					40 CFR 265.93(b) WAC 173-303-400	2002 ^(h)
◆ NRDWL, October 1986	X					40 CFR 265.93(b) WAC 173-303-400	2004 ^(d)
PUREX cribs ⁽ⁱ⁾ 1988		X, 1997				40 CFR 265.93(d) WAC 173-303-400	TBD ^(d)
WMA A-AX, February 1990	X					40 CFR 265.93(b) WAC 173-303-400	TBD
WMA B-BX-BY, February 1990		X, 1996				40 CFR 265.93(d) WAC 173-303-400	TBD
WMA C, February 1990	X					40 CFR 265.93(b) WAC 173-303-400	TBD
WMA S-SX, October 1991		X, 1996				40 CFR 265.93(d) WAC 173-303-400	TBD
WMA T, February 1990		X, 1993				40 CFR 265.93(d) WAC 173-303-400	TBD
WMA TX-TY, September - October 1991		X, 1993				40 CFR 265.93(d) WAC 173-303-400	TBD

Table 2.2.3. (contd)

TSD Units, date initiated	Interim Status TSD Unit Groundwater Monitoring		Final Status TSD Unit Groundwater Monitoring			Groundwater Monitoring Regulations	Calendar Year Scheduled for Part B ^(b) or Closure
	Indicator Parameter Evaluation ^(a)	Groundwater Quality Assessment, date initiated	Detection Evaluation	Compliance Evaluation	Corrective Action, date initiated		
WMA U, October 1990		X, 2000				40 CFR 265.93(b) WAC 173-303-400	TBD

- (a) Contamination indicator parameters (pH, specific conductance, total organic carbon, and total organic halides) used to determine if a facility is affecting groundwater quality. Exceeding the established limits means that additional evaluation and sampling are required (i.e., groundwater quality assessment). An X in the assessment column indicates whether an evaluation was needed or an assessment was required.
- (b) Part B of RCRA permit application.
- (c) Monitored according to interim status plan as specified in closure plans.
- (d) Closure/post-closure plan; TSD unit will close under WAC 173-303-610.
- (e) Implementing alternative statistical method for a 2-year trial period as a demonstration of, and in accordance with, a Washington State Department of Ecology directive (letter from D. Goswami to M. Furman, dated May 7, 2001).
- (f) Closure plan pending Washington State Department of Ecology approval.
- (g) Statistical evaluations suspended in January 2001 because only one downgradient well is not dry.
- (h) Draft facility Part B permit application and final status groundwater monitoring plan submitted in 2002.
- (i) 216-A-10, 216-A-36B, and 216-A-37-1 combined into one RCRA monitoring unit. RCRA monitoring will be performed according to interim status groundwater quality assessment requirements.

CFR = Code of Federal Regulations.
 LERF = Liquid effluent retention facility.
 LLWMA = Low-level waste management area.
 LWDF = Liquid waste disposal facility.
 NRDWL = Nonradioactive Dangerous Waste Landfill.
 PUREX = Plutonium-Uranium Extraction (Plant).
 RCRA = *Resource Conservation and Recovery Act*.
 TBD = To be determined.
 TSD = Treatment, storage, or disposal (unit).
 WAC = Washington (state) Administrative Code.
 WMA = Waste management area.

extent of known contaminants and two were monitored to determine the progress. The facilities monitored under RCRA are scheduled for closure under the Hanford Site Part B RCRA Permit except for the Liquid Effluent Retention Facility and the low-level burial grounds (Low-Level Waste Management Areas 1 to 4), which are operating facilities. DOE submitted an application to the Washington State Department of Ecology during June 2002 to incorporate Low-Level Waste Management Areas 1 to 4 into the Hanford Site Part B RCRA Permit. The application included new groundwater monitoring programs.

2.2.6.4 RCRA INSPECTIONS

R. C. Bowman

Hanford Site contractors and DOE are working to resolve outstanding notices of violation and warning letters of non-compliance that were received from the Washington State Department of Ecology during 2002. These documents identify conditions that are alleged to be non-compliant with RCRA requirements. The following RCRA non-compliance issues are being addressed:

- **Notice of Non-Compliance for Temporary Transfer-Line Leak Detection** – The Washington State Department of Ecology issued a Notice of Non-Compliance letter to the DOE Office of River Protection on August 8, 2002, that documents their concerns regarding the leak detection system associated with temporary transfer lines used at the single-shell tank farms. The Washington State Department of Ecology alleged that the leak detection system associated with temporary transfer lines used at the single-shell tank farms does not meet the requirements of WAC 173-303-400. The Notice of Non-Compliance identified two alleged violations and two concerns. DOE sent a temporary transfer-line management plan to the Washington

State Department of Ecology on December 17, 2002, as requested by the Notice of Non-Compliance.

- **Compliance Issue at the 600 Area Purgewater Storage and Treatment Facility** – The Washington State Department of Ecology letter, dated August 2, 2002, provides their compliance concern associated with the 600 Area Purgewater Storage and Treatment Facility. On March 25, 2002, DOE informed the Washington State Department of Ecology that chromium (D007) waste had been accepted at the 600 Area Purgewater Storage and Treatment Facility at levels above the dangerous waste characteristic designation level (5.0 mg/L [5 ppm]). State regulation WAC 173-303-805 (7)(a)(i) states that the owner/operator must submit a revised Part A to include new information prior to storage, treatment, or disposal of a new constituent. The Washington State Department of Ecology claimed that D007 could not be added to the Part A after acceptance and management of this waste. A Washington State Department of Ecology letter, dated September 10, 2002, rescinded the August 2, 2002, letter citing the violation of WAC 173-303-805(7)(a)(I). No further action was required.

2.2.7 CLEAN AIR ACT

K. A. Peterson

Federal, state, and local agencies enforce the standards and requirements of the *Clean Air Act* to regulate air emissions at facilities such as the Hanford Site. DOE and EPA signed the *Federal Facility Compliance Agreement for Radio-nuclides NESHAP* (EPA 1994). The agreement provides a compliance plan and schedule that are being followed to bring the Hanford Site into compliance with *Clean Air Act* requirements under 40 CFR 61, Subpart H, for continuous measurement of emissions from applicable airborne emission sources. Scheduled milestones of the *Federal Facility Compliance Agreement* (EPA 1994) were met during 2002, and Hanford Site air emissions remained well below the levels that approach the state and EPA offsite emission standard of 10 mrem (100 µSv) per year. The requirements for flow and emissions measurements, quality assurance, and sampling documentation have been implemented at Hanford Site emission sources and/or are monitored for milestone progress in accordance with a schedule approved by EPA and monitored by the Washington State Department of Health. Data for the sources are documented

Table 2.2.4. New RCRA Well Installation Summary for the Hanford Site, 2002^(a)

<u>Well Number</u>	<u>Well ID</u>	<u>RCRA Site</u>	<u>Operational Area</u>
299-W14-19	C3957	WMA TX-TY	200-West
299-W15-44	C5956	WMA TX-TY	200-West

(a) Tri-Party Agreement Milestone M-24-00N.
 ID = Identification number.
 RCRA = *Resource Conservation and Recovery Act*.
 WMA = Waste management area.

annually in the *Radioactive Air Emissions Report for the Hanford Site* (e.g., DOE/RL-2003-21).

The Washington State Department of Health's Division of Radiation Protection regulates radioactive air emissions statewide through delegated authority from EPA and Washington State legislative authority. The Washington State Department of Health implements the federal/state requirements under state regulation WAC 246-247. Prior to beginning any work that would result in creating a new or modified source of radioactive airborne emissions, a notice of construction application must be submitted to the Washington State Department of Health and EPA for review and approval. Typical requirements for radioactive air emission sources include adequate emission controls, emission monitoring/sampling, and/or annual reporting of air emissions. The Hanford Site operates under state license FF-01 for such emissions. Conditions specified in the FF-01 license were incorporated into the Hanford Site air operating permit issued in July 2001. The Hanford Site air operating permit was issued in accordance with Title V of the *Clean Air Act Amendments of 1990*, and will be implemented through federal and state programs under 40 CFR 70 and WAC 173-401. The permit provides a compilation of applicable *Clean Air Act* requirements both for radioactive and non-radioactive emissions at the Hanford Site. The permit requires the DOE Richland Operations Office to submit periodic reports (e.g., *Hanford Site Air Operating Permit Semiannual Report for the Period January 1, 2002 through June 30, 2002* [DOE/RL-2002-38]) and an annual compliance certification to the Washington State Department of Ecology.

The Washington State Department of Ecology's Nuclear Waste Program regulates air toxic and criteria pollutant emissions from the Hanford Site. The Department enforces state regulatory controls for air contaminants as allowed under the Washington *Clean Air Act* (RCW 70.94). The Washington State Department of Ecology's implementing requirements (e.g., WAC 173-400; WAC 173-460) specify a review of new source emissions, permitting, applicable controls, reporting, notifications, and provisions of compliance with the general standards for applicable sources of Hanford Site emissions.

EPA regulates other potential air emission sources under the *Clean Air Act* at the Hanford Site. For example,

40 CFR 82 requires regulation of the service, maintenance, repair, and disposal of certain systems containing Class I and Class II ozone-depleting substances (refrigerants) within facility systems at the Hanford Site. Implementation of the ozone-depleting substance management requirements on the Hanford Site is administered at the facility/project level, as applicable.

At the local level, EPA designated the Benton Clean Air Authority as the agency to establish a local oversight and compliance program for asbestos renovation and/or demolitions. The Benton Clean Air Authority imposes additional requirements on sources within the local agency's jurisdiction and incorporates EPA's regulation by reference, (i.e., the "National Emission Standards for Hazardous Air Pollutants" [40 CFR 61, Subpart M]). In addition, the Benton Clean Air Authority regulates open burning as an extension of the Washington State Department of Ecology's open burning requirements (WAC 173-425).

CLEAN AIR ACT ENFORCEMENT INSPECTIONS

R. C. Bowman

Hanford Site contractors and DOE have worked to resolve notices of violation and warning letters of non-compliance that were received from the Washington State Department of Health and Washington State Department of Ecology during 2002. These documents identify conditions that are alleged to be non-compliant with *Clean Air Act* requirements. The following non-compliance issue has been addressed:

- A Notice of Violation and Compliance Order was received from the Washington State Department of Health on December 18, 2002. The Notice of Violation and Compliance Order identified one alleged violation and two corrective measures. The department alleges that DOE and its contractors (Fluor Hanford, Inc. and CH2M HILL Hanford Group, Inc.) are in violation of the notification requirements of WAC 246-247-080(5). In their letter, the Washington State Department of Health cites a number of historical examples that are used to document their concerns with DOE/contractor notification practices. The Notice of Violation and Compliance Order requires DOE to provide a response within 60 days of the date of receiving the Washington State Department of Health letter.

2.2.8 CLEAN WATER ACT

W. E. Toebe

The *Clean Water Act* applies to point source discharges to surface waters of the United States. At the Hanford Site, the regulations are applied through National Pollutant Discharge Elimination System (40 CFR 122) permits that govern effluent discharges to the Columbia River. There is one National Pollutant Discharge Elimination System permit, WA-002591-7, for the Hanford Site. The permit covers three active outfalls: outfall 001 for the 300 Area Treated Effluent Disposal Facility and outfalls 003 and 004 in the 100-K Area. Fluor Hanford, Inc. is the holder of this permit.

The Hanford Site was covered by one stormwater permit during 2002. EPA's National Pollutant Discharge Elimination System Storm Water Multi-Sector General Permit WAR05A57F establishes the terms and conditions under which stormwater discharges associated with industrial activity are authorized. This permit was issued on May 30, 2001, and supersedes all other National Pollutant Discharge Elimination System stormwater permits previously in effect at the site.

Wastewater from the William R. Wiley Environmental Molecular Sciences Laboratory located in the Richland North Area, is discharged to the city of Richland's wastewater treatment facility under pretreatment permit CR-IU005. This permit, formerly issued by the city to the DOE Richland Operations Office, was re-issued to Battelle on October 1, 2001.

There are numerous sanitary waste discharges to the ground throughout the site. Sanitary waste from the 400 Area is discharged to a treatment facility of Energy Northwest's Columbia Generating Station (Figure 1.0.1). Sanitary waste from the 300 Area, the former 1100 Area, and other facilities north of, and in, Richland discharge to the city of Richland treatment facility. Sanitary wastewater in the 200 Areas of the Hanford Site is primarily treated in a series of septic tanks and drainfields. The placement of these systems is based on population centers and facility locations. In recent years, extensive efforts have been made to regionalize the wastewater treatment systems. Many of the small, single-facility sewer systems

have been replaced with large systems capable of processing as much as 54,883 liters (14,500 gallons) per day. These large systems (with a design capacity of 13,248 to 54,883 liters [3,500 to 14,500 gallons] per day) are permitted by the Washington State Department of Health and treat wastewater from several facilities rather than a single facility.

State Wastewater Discharge Permit Program. The Washington State Department of Ecology, State Wastewater Discharge Permit Program, regulates the discharge or disposal of wastewater to ground waters.

DOE is voluntarily complying with this program at the Hanford Site and is currently holding several state wastewater discharge permits. During 2002, the Hanford Site had seven state waste discharge permits issued by the Washington State Department of Ecology. A brief summary of each permit is included in Appendix D, Table D.6.

2.2.9 SAFE DRINKING WATER ACT

L. M. Kelly

There were nine public water systems on the Hanford Site in 2002. All public water systems are required to meet the *Safe Drinking Water Act*, the *Safe Drinking Water Act Amendments of 1986*, and the *Safe Drinking Water Act Amendments of 1996*. Specific performance requirements are defined within the federal regulations (40 CFR 141; EPA-570/9-76-003; EPA 822-R-96-001) and WAC 246-290. The drinking water program has been updated to comply with the changing regulatory requirements. A complete revision of WAC 246-290 was issued on April 9, 1999, and all site water programs have had the necessary changes incorporated.

Eight of the nine public drinking water systems on site were supplied from the Columbia River. The water treatment plants supplied from the Columbia River must effectively demonstrate compliance with the filtration and disinfection requirements set forth in the Surface Water Treatment Rule. The 283-W water treatment plant in 200-West Area provides water to customers in both 200 Areas as the primary water supply. The 200-East Area water treatment plant remains on standby if needed. The 300 Area is supplied from the city of Richland, but the

300 Area water treatment plant also remains on standby. The well that supplied water to the Hanford Patrol Training Academy was taken out of service for potable use during May 1999. The training academy water is now supplied by the city of Richland, which maintains the system and samples the quality of the drinking water. Drinking water at the Fast Flux Test Facility (400 Area) was primarily drawn from a local groundwater well (499-S1-8J). Section 4.3 provides further information for each public water system.

The compliance monitoring program elements are updated annually with monitoring cycles beginning in January. Drinking water is monitored for radionuclides, inorganics, synthetic and volatile organics, lead, copper, asbestos, arsenic, disinfectant byproducts, and coliform (total and fecal) bacteria. All analytical results for 2002 met the requirements of the Washington State Department of Health. Sample results for radiological monitoring of drinking water are discussed in Section 4.3.

2.2.10 TOXIC SUBSTANCES CONTROL ACT

A. L. Prignano

Requirements in the *Toxic Substances Control Act* that apply to the Hanford Site primarily involve regulation of polychlorinated biphenyls. Federal regulations for use, storage, and disposal of certain classes of polychlorinated biphenyls are found in 40 CFR 761. Washington State also regulates certain classes of polychlorinated biphenyls (not regulated under the *Toxic Substances Control Act*) through the *Dangerous Waste Regulations* in WAC 173-303. Non-radioactive and certain categories of radioactive polychlorinated biphenyl waste are stored and disposed in accordance with 40 CFR 761. Other radioactive polychlorinated biphenyl waste remains in storage on the Hanford Site pending the development of adequate treatment and disposal technologies and capacities. For example, during 2002, 593 drums of depleted uranium in oil containing polychlorinated biphenyl were moved from the 300 Area to the Environmental Restoration Disposal Facility staging area where they will remain pending treatment and disposal. Electrical equipment that might

contain polychlorinated biphenyls or polychlorinated biphenyl items is maintained and serviced in accordance with 40 CFR 761.

The “Framework Agreement for Management of Polychlorinated Biphenyls in Hanford Tank Waste” signed on August 31, 2000, resulted in the EPA, the Washington State Department of Ecology, and DOE and its Hanford Site contractors working together to resolve the regulatory issues associated with managing polychlorinated biphenyl waste at the Waste Vitrification Plant (now under construction), in tank farms, and at affected units upstream and downstream of tank farms (<http://yosemite.epa.gov/R10/OWCM.NSF/0/ce50d3fe12e371f488256a00006ffa0f?OpenDocument>). The flexibility of the 1998 polychlorinated biphenyl disposal revisions found in 40 CFR 761 is used at the Hanford Site to allow necessary storage and to expedite disposal of polychlorinated biphenyl waste regulated by the *Toxic Substances Control Act*.

During June 2002, EPA approved an extension of the risked-based disposal approval for operation of the Hanford Site 242-A evaporator. The original risked-based disposal approval was for operation through March 2001. The extension allows continued operations through early 2003. The 242-A evaporator is located in the 200-East Area and its operation results in reduction of tank waste volume. Two new applications for risked-based disposal approvals were submitted to EPA during 2002. In January 2002, an application for risked-based disposal approval for the double-shell tank system was submitted to EPA. It evaluated risk and exposure pathways associated with operations, storage, handling, and processing of waste in the double-shell tank system. A second application for a risked-based disposal approval was submitted to EPA during February 2002 for operation of the Hanford Site 200 Areas liquid waste processing facilities. The risk evaluation indicated that liquid waste processing facilities could accept aqueous waste streams with up to 6,000 mg/L polychlorinated biphenyls without posing an unreasonable risk to human health or the environment. The applications for the double-shell tank system and the liquid waste processing facilities risked-based disposal approvals are under review by EPA; no responses or comments have been received to date.

2.2.11 FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

J. M. Rodriguez

The *Federal Insecticide, Fungicide, and Rodenticide Act* is administered by EPA. The standards administered by the Washington State Department of Agriculture to regulate the implementation of the act in Washington State include: *Washington Pesticide Control Act* (RCW 15.58), *Washington Pesticide Application Act* (RCW 17.21), and rules relating to general pesticide use codified in WAC 16-228. At the Hanford Site, pesticides are applied by commercial pesticide operators who are listed on one of two commercial pesticide applicator licenses and by a private commercial applicator.

2.2.12 ENDANGERED SPECIES ACT OF 1973

R. K. Zufelt

Several protected species of plants and animals exist on the Hanford Site and in the Hanford Reach of the Columbia River. The bald eagle (*Haliaeetus leucocephalus*) occurs on the site and steelhead (*Oncorhynchus mykiss*) and spring-run chinook salmon (*Oncorhynchus tshawytscha*) are listed by the U.S. Fish and Wildlife Service as either threatened or endangered (50 CFR 17, Subpart B) and occur onsite. Other species are listed by the Washington Department of Fish and Wildlife as endangered, threatened, or sensitive species (Appendix G).

Bald eagles are seasonal visitors to the Hanford Site. The Pacific Northwest National Laboratory documented several nesting attempts along the Hanford Reach during the 1990s. The Hanford Site bald eagle management plan (DOE/RL-94-150) was finalized in 1994. This plan established seasonal 800-meter (2,600-foot) zones of restricted access around all active nest sites and five major communal roosting sites. If nesting activities are observed during January and early February, all Hanford-related activities within the restricted access zone are constrained or limited until the pair abandons nesting or successfully rears young.

Steelhead and spring-run chinook salmon are regulated as evolutionary significant units by the National Oceanic and Atmospheric Administration Fisheries based on their historical geographic spawning areas. The evolutionary significant units for the upper Columbia River steelhead and the upper Columbia River spring-run chinook salmon were listed as endangered during August 1997 and March 1999, respectively. A Hanford Site steelhead management plan (DOE/RL-2000-27) was prepared and serves as the formal plan for the National Oceanic and Atmospheric Administration Fisheries as required under the *Endangered Species Act of 1973*. Like the bald eagle management plan, the steelhead management plan discusses mitigation strategies and lists activities that can be conducted without impacting steelhead or their habitats.

2.2.13 MIGRATORY BIRD TREATY ACT

M. R. Sackschewsky

The *Migratory Bird Treaty Act* prohibits taking or disturbing specified migratory birds or their feathers, eggs, or nests. There are over 100 species of birds that regularly occur on the Hanford Site that are protected by the *Migratory Bird Treaty Act*.

All Hanford Site projects with a potential to affect federally- or state-listed species of concern complied with the requirements of this act by using the ecological review process as described in the *Hanford Site Biological Resources Management Plan* (DOE/RL-96-32). When applicable, the ecological reviews produced recommendations to minimize the adverse impact to migratory birds, such as performing work outside of the nesting season and minimizing the loss of habitat.

2.2.14 CULTURAL RESOURCES

D. W. Harvey

Cultural resources on the Hanford Site are mainly subject to the provisions of the following seven acts, one executive order, and one Presidential Proclamation: *American Indian Religious Freedom Act*; *Antiquities Act of 1906*;

Archaeological and Historic Preservation Act; *Archaeological Resources Protection Act of 1979*; Executive Order 11593, *Protection and Enhancement of the Cultural Environment* (36 FR 8921); *Historic Sites, Buildings, and Antiquities Act*; *National Historic Preservation Act*; *Native American Graves Protection and Repatriation Act*, and Proclamation 7319 of June 9, 2000 (65 FR 37253). Compliance with these regulations is accomplished through an active management and monitoring program. Included in the program is the review of all proposed projects to assess their potential impact on cultural resources and the periodic inspection of known archaeological sites and historic buildings to determine their condition and eligibility for listing in the National Register of Historic Places. The effects of land management policies on archaeological sites and buildings, and management of a repository for federally owned archaeological collections and Manhattan Project and Cold War era artifacts are evaluated. Federal agencies, as a matter of policy, are directed by Executive Order 11593 and Section 110 of the *National Historic Preservation Act* to administer the cultural and historic properties under their control in a spirit of stewardship and trusteeship for future generations.

During 2002, 164 cultural resource reviews were conducted on the Hanford Site to comply with Section 106 of the *National Historic Preservation Act*. The *American Indian Religious Freedom Act* requires federal agencies to help protect and preserve the rights of Native Americans to practice their traditional religions. DOE cooperates with Native Americans by providing site access for organized religious activities. The regulations of the *Native American Graves Protection and Repatriation Act* provides a process to determine the rights of Indian Tribes “to certain Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony with which they are affiliated” (43 CFR 10).

Proclamation 7319 of June 9, 2000 (65 FR 37253), established the Hanford Reach National Monument that incorporated selected areas of the Hanford Site. Administered by DOE Richland Operations Office and the U.S. Fish and Wildlife Service, “the monument is one of the few remaining archaeological rich areas in the western Columbia Plateau, containing well-preserved remnants of human history spanning more than 10,000 years” (65 FR 37253). President Clinton issued a memorandum to the Secretary of Energy the same day the proclamation

was signed directing DOE to manage and protect “...objects of scientific and historic interest...where practical” in the site’s central area as if they were in monument lands.

See Section 8.3 for more details regarding the cultural resources program on the Hanford Site.

2.2.15 NATIONAL ENVIRONMENTAL POLICY ACT

M. T. Jansky

The *National Environmental Policy Act* requires consideration of the effects of major federal actions before those actions are taken. The preparation of an environmental impact statement is required for major federal actions with the potential to impact the quality of the human environment. Other *National Environmental Policy Act* documents include the environmental assessment which is prepared when it is uncertain if a proposed action has the potential to significantly impact the environment and, therefore, would require the preparation of an environmental impact statement. A supplemental analysis is prepared to consider new information developed since issuance of a *National Environmental Policy Act* environmental impact statement and record of decision. The purpose is to consider if the federal action is still bounded by the original environmental impact statement and record of decision or if a supplemental environmental impact statement is required.

Additionally, certain types of actions may fall into typical classes that have already been analyzed by DOE and have been determined not to result in a significant environmental impact. These actions are called categorical exclusions, and, if eligibility criteria are met, they are exempt from *National Environmental Policy Act* environmental assessment or environmental impact statement requirements. Typically, the DOE Richland Operations Office documents more than 20 specific categorical exclusions annually, involving a variety of actions by multiple Hanford Site contractors. In addition, site-wide categorical exclusions are applied to routine, typical actions conducted daily on the Hanford Site. In 2002, there were 20 site-wide categorical exclusions.

National Environmental Policy Act documents for the Hanford Site are prepared and approved in accordance with

Council on Environmental Quality National Environmental Policy Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500-1508), DOE *National Environmental Policy Act* implementation procedures (10 CFR 1021), and DOE Order 451.1B. In accordance with the Order, DOE documents prepared for CERCLA projects incorporate *National Environmental Policy Act* values such as analysis of cumulative, offsite, ecological, and socioeconomic impacts to the extent practicable in lieu of preparing separate *National Environmental Policy Act* documentation.

2.2.15.1 RECENT ENVIRONMENTAL IMPACT STATEMENTS

The potential environmental impact associated with ongoing, major operations at the Hanford Site has been documented in environmental impact statements and in the ensuing records of decision. Additional *National Environmental Policy Act* reviews and supplemental analyses as appropriate are conducted during the course of the actions, as described in the records of decision.

A final environmental impact statement for the stabilization of plutonium-bearing materials at the Plutonium Finishing Plant was issued in May 1996 (DOE/EIS-0244F). The proposed action is to stabilize selected plutonium-bearing materials for interim storage and immobilize some materials for transport to a Hanford Site solid waste management facility. The record of decision was issued in July 1996 (61 FR 36352). In 2002, two supplemental analyses were prepared to provide the basis for determining if a supplemental environmental impact statement would be required. Seven previously prepared supplemental analyses (DOE/EIS-0244-FS/SA1 through DOE/EIS-0244-FS/SA7) resulted in determinations that the *National Environmental Policy Act* required no additional analyses.

A supplemental analysis (DOE/EIS-0244-FS/SA8) was issued on April 15, 2002, and provided the basis for determining if a supplemental environmental impact statement was required before thermal stabilization of polycubes and combustibles at the Plutonium Finishing Plant. It was determined that additional *National Environmental Policy Act* analysis was not required.

A supplemental analysis (DOE/EIS-0244-FS/SA9) was issued on December 10, 2002, and provided the basis for determining if a supplemental environmental impact statement was required before disposition of hold-up plutonium-bearing material, mixed oxide materials, and alloy/oxide and metal materials at the Plutonium Finishing Plant. It was determined that additional *National Environmental Policy Act* analysis was not required.

2.2.15.2 PROGRAMMATIC AND OFFSITE ENVIRONMENTAL IMPACT STATEMENTS

The final environmental impact statement was issued in May 1997 (DOE/EIS-0200F) to evaluate management and national siting alternatives for the treatment, storage, and disposal of five types of radioactive and hazardous waste. The Hanford Site was considered in all alternatives. A record of decision was issued in January 1998 (63 FR 3623) on treatment and storage of transuranic waste. A subsequent record of decision on hazardous waste treatment was issued in August 1998 (63 FR 41810). A record of decision for storage of immobilized high-level waste was issued in August 1999 (64 FR 46661). A record of decision for the treatment and disposal of low-level waste and mixed low-level waste was issued in February 2000 (65 FR 10061). A revised record of decision for treatment and storage of transuranic waste was issued in September 2002 (67 FR 56989).

The *Idaho High-Level Waste & Facilities Disposition Final Environmental Impact Statement* (DOE/EIS-0287) was issued by the Idaho National Engineering and Environmental Laboratory in August 2002 for the disposition of Idaho high-level waste and facilities in which Hanford was listed as an alternative disposal site. A record of decision is expected to be issued in 2003.

The final environmental impact statement affecting the Fast Flux Test Facility (DOE/EIS-0310) was issued in December 2000. The final statement evaluated the expanded civilian nuclear energy research and development and isotope production missions in the United States including the role of the Fast Flux Test Facility at the Hanford Site. A record of decision was issued in January 2001 (66 FR 7877) indicating the Fast Flux Test

Facility would be permanently deactivated, but the ruling was later postponed pending review.

2.2.15.3 SITE-SPECIFIC ENVIRONMENTAL IMPACT STATEMENTS IN PROGRESS

Work on a draft environmental impact statement for the Hanford Site Solid (Radioactive and Hazardous) Waste Program continued during 2002.^(a) The draft environmental impact statement will be issued for public comment.

US Ecology operates a commercial low-level radioactive waste disposal site near the 200 Areas on land leased from the federal government by the state of Washington. The Washington State Department of Health and Washington State Department of Ecology distributed a draft environmental impact statement for the facility for comment in August 2000. This *Washington State Environmental Policy Act* (RCW 43.21C) impact statement considers the renewal of US Ecology's license to operate the waste site, an increase to the upper limit for disposal of naturally occurring radioactive materials, and an approval of the site stabilization and closure plan. A final decision is pending review.

A draft comprehensive conservation plan and environmental impact statement for the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge is being prepared by the U.S. Fish and Wildlife Service to evaluate management alternatives for the monument and national wildlife refuge. As co-manager of the monument, DOE Richland Operations Office is a cooperating agency. The draft environmental impact statement will be issued for public comment.

A draft environmental impact statement is being prepared on retrieval, treatment, and disposal of tank waste and closure of single-shell tanks. The environmental impact statement will consider the impact of the proposed retrieval, treatment, and disposal of the waste being managed in the high-level waste tank farms, and closure of the 149 single-shell tanks and associated facilities in the tank farms. The Washington State Department of Ecology

is a cooperating agency in the preparation of this environmental impact statement. The draft environmental impact statement will be issued for public comment.

2.2.15.4 RECENT ENVIRONMENTAL ASSESSMENTS

An environmental assessment was prepared to determine whether an environmental impact statement would be required for the retrieval of drummed, post-1970 transuranic waste from storage trenches for storage and eventual disposal (DOE/EA-1405). The analysis of the anticipated impact led to a conclusion that no significant effects were expected. A finding of no significant impact was issued on March 22, 2002, determining that no further review was required under the *National Environmental Policy Act*.

An environmental assessment was prepared to determine whether an environmental impact statement would be required for expansion of the Volpentest Hazardous Materials Management and Emergency Response Training and Education Center, including additional training modules and an emergency vehicle-training course (DOE/EA-1412). The assessment led to a conclusion that no significant impact was expected. A finding of no significant impact was issued on November 6, 2002, determining that no further review was required under the *National Environmental Policy Act*.

2.2.16 THE HANFORD SITE INSTITUTIONAL CONTROLS PLAN

A. E. Teimouri

Institutional control requirements are included within most of the Hanford Site CERCLA records of decision. These requirements vary somewhat between records of decision, but typically include procedural restrictions for access, warning notices, and land-use controls. The initial records of decision for the Hanford Site established requirements only for the specific waste sites addressed by the cleanup action. More recent records of decision

(a) A draft report (DOE/EIS-0286), *Hanford Site Solid (Radioactive and Hazardous) Waste Program Environmental Impact Statement*, is being prepared by the U.S. Department of Energy, Richland Operations Office, Richland, Washington.

include both site-specific and site-wide requirements. The 100 Area burial ground interim action record of decision (issued during September 2000) (EPA 2000a) required that DOE develop and submit a site-wide institutional control plan for EPA and Washington State Department of Ecology approval. The plan, the *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions* (DOE/RL-2001-41), was approved by the regulatory agencies in July 2002. The plan requires DOE to submit an annual assessment of the performance of the institutional controls for the Hanford Site with the first submittal due July 2003.

Several site-specific institutional controls established in CERCLA records of decision are applicable to waste sites under each project. These institutional controls can be characterized into five general categories, as follows:

- **Procedural access controls** – Access controls are achieved through the DOE badging program and via escorting of visitors entering any of the controlled waste sites.
- **Land-use management controls** – Controls that specifically identify prohibitions against unauthorized disturbance (e.g., well drilling or intrusive work) of waste sites are addressed by various records of decision.
- **Warning notices/signs** – Signs required by records of decision along the Columbia River shoreline as well as along access roads; some records of decision simply state that existing signs must be maintained. Warning signs at the Hanford Site are typically “layered” from the general to the more specific and may include general signs prohibiting trespass, waste-site-specific postings warning of hazards, and/or radioactive area postings. This layered approach reflects a graded approach based on site hazards. For waste sites behind security checkpoints (i.e., badge houses), all entrants must have appropriate access training prior to entrance. Warnings such as “restricted access,” “no trespassing,” or similar signs are typically present at access roads leading to waste sites, whether the sites are within or outside of security checkpoints. Waste sites outside of security checkpoints are often fenced, with warning signs present on the fencing. Sites undergoing active remediation include notification signs warning of the cleanup activities, and the sites themselves are generally fenced. Finally, sites with radioactive contamination are posted with radioactive control signs or markers at the actual waste site.
- **Notification of trespass events** – Trespass incidents must be reported under the terms of the various records of decision. DOE is required to notify EPA and the Washington State Department of Ecology in the event of trespass incidents. For example, the 100 Areas burial grounds (EPA 2000a), the 100-NR-1 Operable Unit (EPA 2000b), the 100 Areas remaining sites (EPA 1999), and the 300-FF-2 Operable Unit (EPA 2001). In addition, the latter three records of decision also stipulate that trespass events be reported to the Benton County Sheriff’s Office.
- **Recordkeeping on remedial action information** – A tracking system that identifies all land under restriction or control is required in some records of decision such as the 100 Area burial grounds record of decision (EPA 2000a). The 300-FF-1 and 300-FF-5 record of decision (EPA 1996) contains a requirement for placing written notification of remedial action in the facility land-use master plan. Institutional controls for individual remediated waste sites are identified in the cleanup verification packages approved by the lead regulatory agency. Institutional controls identified in the cleanup verification packages are typically entered into the Waste Information Data System. The Waste Information Data System serves as the primary mechanism used by site contractors to record institutional controls associated with remediated waste sites.