
ENVIRONMENTAL COMPLIANCE SUMMARY

CALENDAR YEAR 1995

Introduction: Compliance Program

The primary mission of the West Valley Demonstration Project (WVDP) is to develop and demonstrate a safe method of solidifying high-level radioactive mixed waste. Vitrification, the selected method, converts radioactive and hazardous materials into a glass-like substance by incorporating the materials into the glass structure. The treatment process is regulated by various federal and state laws and regulations in order to protect the public, workers, and the environment.

The U.S. Department of Energy (DOE), the federal agency that oversees the WVDP, established its policy concerning environmental protection in DOE Order 5400.1, General Environmental Protection Program. This Order lists the regulations, laws, and required reports that are applicable to DOE-operated facilities. DOE Order 5400.1 requires the preparation of this annual Site Environmental Report, which is intended to summarize environmental data gathered during the calendar year, describe significant programs, and confirm compliance with environmental regulations.

In September 1981, pursuant to the WVDP Act, the DOE and the U.S. Nuclear Regulatory Commission (NRC) entered into an agreement that established procedures for review and consultation by the NRC with respect to DOE activities at West Valley. The review and consultation is conducted informally and does not include formal or required procedures or actions by the NRC.

The major federal environmental laws that apply to the West Valley Demonstration Project are the Resource Conservation and Recovery Act, the Clean Air Act, the Emergency Planning and Community Right-to-Know Act, the Clean Water Act, the Safe Drinking Water Act, the Toxic Substances Control Act, and the National Environmental Policy Act. Regulations developed in accordance with these laws are administered primarily by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) through state programs and regulatory requirements such as permitting, reporting, inspecting, and performing audits. The DOE issues Orders under the Atomic Energy Act (AEA) to regulate its own activities regarding radioactive materials.

In addition, because the emission of radiological and nonradiological materials from an active fa-

cility cannot be completely prevented, the EPA, NYSDEC, and the DOE have established exposure standards for such emissions to protect human health and the environment. The WVDP applies to NYSDEC and the EPA for permits that allow the site to release limited concentrations of radiological and nonradiological constituents through controlled and monitored discharges of water and air. These concentrations have been determined to be safe for humans and the environment. The permits describe the discharge points, list the limits on those pollutants likely to be present, and define the sampling and analysis schedule where required.

Inspections and audits are conducted routinely by the EPA, NYSDEC, the NRC, the New York State Department of Health (NYSDOH), and the Cattaraugus County Health Department. On-site and off-site radiological monitoring in 1995 confirmed that site activities were conducted well within state and federal regulatory limits. However, some nonradiological State Pollutant Discharge Elimination System (SPDES) permit limits were exceeded. (These exceedances are described in more detail in the section on the Clean Water Act.) No notices of violation were issued and efforts have been made to eliminate the potential for these exceedances to recur.

Management at the WVDP continued to provide strong support for environmental compliance issues. DOE Orders and applicable state and federal statutes and regulations are integrated into the compliance program at the Project, demonstrating a commitment to protecting the public and the environment while working towards the WVDP goal of high-level radioactive mixed waste vitrification.

An operational readiness review (ORR) for radioactive operations was conducted by the DOE in November 1995. In preparation for the ORR, a comprehensive review of all site programs was performed. (See **Project Assessment Activities in 1995** [p. lviii].)

The following environmental compliance summary describes the federal and state laws and regulations that are applicable to the WVDP and the relevant environmental compliance activities that occurred at the WVDP in 1995.

Compliance Status

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act was enacted to ensure that hazardous wastes are managed in a manner that protects human health and the environment. RCRA and its implementing regulations govern hazardous waste generation, treatment, storage, and disposal. Generators are responsible for ensuring the proper treatment, storage, and disposal of their wastes under RCRA.

Various federal agencies have specific responsibilities under RCRA. The EPA is responsible for issuing guidelines and regulations for the proper management of solid and hazardous waste. In New York, the EPA has delegated the authority to administer these regulations to NYSDEC. In May 1990 the state of New York was authorized by the EPA to administer a radioactive mixed waste management program. The U.S. Department of Transportation is responsible for issuing guidelines and regulations for the labeling, packaging, and spill-reporting provisions for hazardous wastes in transit.

Each facility that treats, stores (for more than 90 days), or disposes of hazardous waste at that facility must apply for a permit from the EPA (or state, if authorized). The permit defines the treatment processes to be used, the design capacity of these processes, the location of hazardous waste storage units, and the hazardous wastes to be handled. In 1984 the DOE notified the EPA of hazardous waste activities at the WVDP, identifying the WVDP as a generator of hazardous

waste. In June 1990 the WVDP filed a RCRA Part A Permit Application with NYSDEC. Based on that submittal, the WVDP was granted interim status.

The WVDP continues to update the RCRA Part A Permit Application as changes to the site's interim-status waste-management operations occur. In September 1995 the WVDP amended the Application to incorporate the addition of a mixed waste storage area for high integrity containers, the addition of silver to the characterization of the THOREX waste stream (see *Chapter 1* [p.1-7]), and the deletion of two unused mixed waste storage tanks.

Hazardous Waste Management Program

To dispose of hazardous wastes generated from on-site activities, the WVDP uses permitted transportation services to ship RCRA-regulated wastes to treatment, storage, or disposal facilities (TSDFs). In 1995 the WVDP shipped approximately 49.8 metric tons (55 tons) of nonradioactive, hazardous waste off-site. Of this amount, 1.5 metric tons (1.7 tons) were recycled by the TSDFs.

Hazardous waste shipments and their receipt at designated TSDFs are documented by signed manifests that accompany the shipment. If the signed manifest is not returned to the generator of the waste within the NYSDEC statutory limit of forty-five days from shipment, an exception report must be filed and receipt of the waste confirmed with the TSDF. No exception reports were required to be filed in 1995.

Hazardous waste activities must be reported to NYSDEC every year through the submission of an annual hazardous waste report. This report lists the quantities of each waste type generated, the TSDFs used, and the type of treatment the wastes received.

In addition, a hazardous waste reduction plan must be filed every two years and updated annually. This plan, which documents the efforts to minimize the generation of hazardous waste, was first submitted to NYSDEC in 1990. The plan was most recently submitted in 1994 and revised in 1995.

Annual inspections to assess compliance with hazardous waste regulations were conducted by NYSDEC (March 16, 1995) and the EPA (July 20, 1995). No deficiencies were noted during the inspections.

Nonhazardous, Regulated Waste Management Program

The WVDP transported approximately 162.8 metric tons (179.6 tons) of nonradioactive, non-hazardous material off-site to TSDFs in 1995. Of this amount, 7.1 metric tons (7.9 tons) were recycled or reclaimed. The industrial waste materials included items such as concrete, asbestos debris, monitoring-well purge water, and neutralized acidic wastewaters. Some of the regulated materials recycled/reclaimed included lead acid batteries and nonhazardous oil. In 1995 the WVDP also shipped approximately 1,835 metric tons (2,023 tons) of sewage-treatment waste to permitted wastewater treatment facilities.

Radioactive Mixed Waste (RMW) Management Program

Radioactive mixed waste contains both a radioactive component, regulated under the AEA, and a hazardous component, regulated under RCRA. Both the EPA and NYSDEC oversee radioactive mixed waste management at the WVDP. Potential conflicts between AEA and RCRA requirements led the WVDP to initiate discussions with the EPA and NYSDEC. To address the management of the hazardous component of radioactive mixed waste, in March 1993 the DOE entered into a Federal and State Facility Compliance Agreement (FSFCA) with the EPA, NYSDEC, the New York State Energy Research

and Development Authority (NYSERDA), and West Valley Nuclear Services Company, Inc. (WVNS), the primary contractor for the DOE at the WVDP. The FSFCA addresses the requirements for managing the hazardous component of the radioactive mixed waste such as compliance with the Land Disposal Restrictions of RCRA for radioactive mixed waste, specifies particular storage requirements for radioactive mixed waste, and requires the characterization of historical wastes stored at the WVDP. The characterization of historical wastes continued during 1995.

The Federal Facility Compliance Act (FFCAct) of 1992, an amendment to RCRA, was signed into law on October 6, 1992. The FFCAct requires DOE facilities to develop treatment plans for radioactive mixed waste inventories and to enter into agreements with regulatory agencies requiring the treatment of the inventories according to the approved plans.

DOE facilities developed site treatment plans in three steps: conceptual, draft, and proposed. The WVDP's conceptual plan was submitted to NYSDEC in October 1993 and the draft plan in August 1994. The WVDP submitted the proposed site treatment plan to NYSDEC in March 1995. The proposed plan is comprised of two volumes: the Background Volume and the Plan Volume. The Background Volume provides information on each radioactive mixed waste stream as well as information on the preferred treatment method for the waste. The Plan Volume contains proposed schedules for treating the radioactive mixed waste to meet the Land Disposal Restrictions requirements of RCRA. Each submittal to NYSDEC underwent a public comment period during which input was solicited from WVDP stakeholders.

Upon approval of the proposed plan by NYSDEC, the DOE and NYSDEC will enter into a consent order requiring compliance with the Plan Volume of the treatment plan. Since March 1995, the DOE has been negotiating the terms of the consent order

with NYSDEC. The DOE expects that the consent order will be executed in May 1996.

RCRA Facility Investigation (RFI) Program

The DOE and NYSERDA entered into a 3008(h) Administrative Order on Consent under RCRA with NYSDEC and the EPA in March 1992. The Consent Order requires NYSERDA and the DOE West Valley Area Office to conduct RCRA facility investigations at solid waste management units (SWMUs) to determine if there has been a release or if there is a potential for release of RCRA-regulated hazardous waste or hazardous constituents from SWMUs.

Because of the proximity of some of the units identified in the Consent Order, twenty-five SWMUs were grouped into twelve super solid waste management units (SSWMUs) to facilitate investigative efforts under the RCRA facility investigation (RFI) program.

In general, the purpose of an RFI is to collect and evaluate information to determine which of the following actions are appropriate for each SWMU or SSWMU: no further action; a corrective measures study; or additional investigations to support one of these other actions. The RFI addresses RCRA-regulated hazardous wastes or hazardous constituents. To define and assess the environmental settings, unit and waste characteristics, and the potential sources and extent of nonradiological contamination, the WVDP has reviewed existing information, collected and analyzed more than two hundred surface soil, subsurface soil, and sediment samples, and collected and reviewed groundwater data.

Of the twelve SSWMUs, two have been identified to date as requiring no further action: #10, the integrated radwaste treatment system drum cell, and #12, the hazardous waste storage lockers. The remaining ten were assessed as part of the RFI program to determine the appropriate actions to be taken. Seven draft SSWMU assessment reports

were submitted to the EPA and NYSDEC for review in 1995. The remaining draft SSWMU assessment reports will be submitted in 1996, with the last report being submitted to the EPA and NYSDEC by May 1996.

In May 1994 sixteen rooms previously used during nuclear fuel reprocessing operations were evaluated under the RFI program, as required by the Consent Order. In December 1994 the EPA and NYSDEC reviewed the evaluation and issued a determination of "no further action" for eight of the rooms. Additional information on the remaining eight rooms was requested and submitted to the EPA and NYSDEC.

A discussion of the NRC-licensed disposal area (NDA) interceptor trench and pretreatment system, as required under the NDA Interim Measures Work Plan, is found under **Special Monitoring** (p. 2-30) in *Chapter 2, Environmental Monitoring*.

Waste Minimization and Pollution Prevention

The WVDP has initiated a long-term program to minimize the generation of low-level radioactive waste, radioactive mixed waste, hazardous waste, industrial waste, and sanitary waste as directed by Executive Order 12856, Federal Compliance with Right-to-Know and Pollution Prevention Requirements. Using 1993 waste-generation rates as a baseline for comparison, the WVDP plans to reduce the generation of low-level radioactive waste, radioactive mixed waste, and hazardous waste by 50% by December 1, 1999. (This waste reduction determination does not include vitrification-related wastes: baseline information for these wastes was not available in 1993.) The generation of industrial and sanitary waste will be reduced by 30% by the same date. Toward that end, the WVDP set the following cumulative waste-reduction goals for 1995: an 18% reduction in the generation of low-level radioactive waste, radioactive mixed waste, and

hazardous waste; a 14% reduction in industrial waste; and a 6% reduction in sanitary waste.

The WVDP met or exceeded the 1995 reduction goals for all six waste categories. Low-level radioactive waste generation was reduced by 55%, radioactive mixed waste generation by 80%, and hazardous waste generation by 37%. Industrial waste generation was reduced by 16% and sanitary waste generation by 25%.

Specific accomplishments in waste minimization and pollution prevention during 1995 included the following:

- The WVDP instituted a sitewide paper recycling program in March 1993. In 1995, 242 metric tons (267 tons) of paper were recycled, 75.7% more than in 1994.
- 82.1 metric tons (90.5 tons) of carbon steel, stainless steel, and copper were recycled.
- 1.5 metric tons (1.7 tons) of hazardous waste were recycled.
- 7.1 metric tons (7.8 tons) of nonhazardous, regulated waste were recycled in 1995.

Underground Storage Tanks Program

RCRA regulations also cover the use and management of underground storage tanks and establish minimum design requirements in order to protect groundwater resources from releases. The regulations, codified at Title 40 Code of Federal Regulations (CFR) Part 280, require underground storage tanks to be equipped with overfill protection, spill prevention, corrosion protection, and leak detection systems. New tanks must comply with regulations at the time of installation. Facilities with tanks in service on December 22, 1988, were allowed a grace period for installing the upgrades.

New York State also regulates underground storage tanks through two programs, petroleum bulk storage (6 NYCRR Parts 612 - 614) and chemical bulk storage (6 NYCRR Parts 595 - 599). The registration and minimum design requirements are similar to those of the federal program, except that petroleum tank fill ports must be color-coded using American Petroleum Institute standards to indicate the product being stored. The WVDP does not use underground chemical bulk storage tanks.

The WVDP does store petroleum products in three regulated, 2,000-gallon underground tanks. Two of the tanks contain unleaded gasoline. The third tank contains low-sulfur diesel fuel. Procedural controls in conjunction with metered delivery provide overfill protection and spill prevention. The tank fill ports are color-coded as required. Leak detection requirements are met through daily tank-gauging, inventory records, and monthly reconciliations of the product added, product removed, and the current contents. Annual tank tightness and integrity testing was conducted on November 1, 1995.

A fourth regulated tank, a 550-gallon underground storage tank, is used to store diesel fuel for the standby power plant for the supernatant treatment ventilation blower system. This tank, a double-walled tank with an interstitial leak-detection system (see *Glossary*), is filled by a metered delivery system and is monitored through daily gauging and monthly reconciliations. The tank's fill port is also color-coded in accordance with American Petroleum Institute standards.

In accordance with 40 CFR Part 280.21, these underground tanks must be upgraded to meet the requirements for new or substantially modified underground storage tanks (e.g., corrosion protection, interior lining) by December 22, 1998, or be permanently closed.

Registration for all regulated underground tanks is renewed with NYSDEC as required.

New York State-regulated Aboveground Storage Tanks

The state of New York regulates aboveground petroleum storage under 6 NYCRR Parts 612, 613, and 614. Aboveground hazardous chemical storage is regulated by New York State under 6 NYCRR Part 595 et seq. These regulations require secondary containment, external gauges to measure the current reserves, monthly visual inspections of petroleum tanks, and documented internal inspections. Furthermore, petroleum tank fill ports must be color-coded and chemical tanks labeled to indicate the product stored.

One petroleum and four chemical bulk storage aboveground tanks were permanently closed in 1995. Registration for all regulated aboveground tanks is renewed with NYSDEC as required. At the end of 1995, seven aboveground petroleum tanks and fifteen aboveground chemical storage tanks were registered. Three of the petroleum tanks contain No. 2 fuel oil; the remainder contain diesel fuel. Twelve of the chemical storage tanks contain nitric acid or nitric acid mixtures. Sulfuric acid, sodium hydroxide, and anhydrous ammonia are stored in the remaining three tanks. All of the tanks are equipped with gauges and secondary containment systems.

The Quality Assurance department inspects the aboveground petroleum tanks on a monthly basis. In December 1995 an inspection of all aboveground, hazardous substance storage tanks was conducted to fulfill the new requirements for annual inspection (6 NYCRR Part 598.7 (c)). No violations were noted during the inspection.

Closed Nonradioactive Construction Debris Disposal Facility

Ongoing maintenance required for the construction and demolition debris landfill, closed under New York State regulation 6 NYCRR 360, is discussed under **Special Monitoring** (p. 2-33) in *Chapter 2, Environmental Monitoring*.

Medical Waste Tracking

Medical waste poses a potential for exposure to infectious diseases and pathogens from contact with human bodily fluids. Medical evaluations, inoculations, and laboratory work at the on-site nurse's office regularly generate potentially infectious medical wastes that must be tracked in accordance with NYSDEC requirements (6 NYCRR Part 364.9). The WVDP has retained the services of a permitted waste hauler and disposal firm to manage the medical wastes generated. Medical wastes are autoclaved by the disposal firm to remove the associated hazard and then disposed. Approximately 32 kilograms (70 lbs) of medical waste were disposed in 1995.

Clean Air Act (CAA)

The Clean Air Act establishes a framework for the EPA to regulate air emissions from both stationary and mobile sources. NYSDEC is currently adopting regulations to implement the CAA requirements. In New York State, permits for stationary sources emitting regulated pollutants, including hazardous air pollutants, are issued by either the EPA or NYSDEC. Sources requiring permits are those that emit a regulated pollutant, which is above a predetermined threshold, from a particular source through a stack, duct, vent, or other similar opening. Under the CAA, this type of air emission is considered a point source. Non-point sources of emissions, such as lagoons and soil piles, do not require specific permits from the EPA or NYSDEC. Emissions from these sources are, however, quantified for reporting purposes to both the EPA and NYSDEC.

Emissions of radionuclides from the WVDP are regulated by the EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAP [40 CFR Part 61]). Currently, the WVDP has permits for six radionuclide sources. In May 1995 the WVDP received interim approvals from the EPA to operate two additional

sources: the slurry-fed ceramic melter and the vitrification heating, ventilation, and air conditioning (HVAC) system. Other less significant sources of radionuclide emissions, such as those from the on-site laundry, do not require permits. The WVDP reports the radionuclide emissions from its non-permitted and permitted sources to the EPA annually in accordance with NESHAP requirements. Calculations to demonstrate compliance with NESHAP radioactive emissions standards showed 1995 doses to be less than 0.01% of the 10 millirem standard.

Nonradiological sources of air emissions are regulated by NYSDEC. The WVDP has thirty permits-to-construct (PCs) and certificates-to-operate (COs) nonradiological point sources. In 1995 four PCs were converted to COs for the cold chemical facility and the vitrification facility HVAC system. These COs expire in 1999. Eight COs were renewed in 1995; the renewals expire in 1999. The vitrification facility off-gas system PC was extended in 1995 to allow for the completion of construction and start-up testing. An application to convert the PC to a CO will be requested from NYSDEC after completion of a nitrous oxide stack test, which will be performed to verify emissions and the accuracy of the monitoring system. The testing is scheduled for completion during the second quarter of 1996.

The air permits in effect at the WVDP in 1995 are listed in *Appendix B*, Table B-3 (p. B-5 through B-9).

NYSDEC conducted its annual inspection of air emission sources at the WVDP on October 3, 1995. No violations were noted during the inspection. The EPA did not inspect the radionuclide sources in 1995.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act authorizes the EPA to prioritize and regulate the cleanup of certain inactive hazardous waste disposal sites. In addition, the EPA regulates the response to hazardous substance spills and releases under this authority. The EPA collects data and prioritizes sites according to their potential to cause adverse human health or environmental effects. The sites with the highest priority are placed on the National Priority List.

On February 5, 1993, the WVDP was added to the EPA's Federal Agency Hazardous Waste Compliance docket as established under CERCLA. As required under CERCLA Section 120(c), a preliminary assessment of the WVDP was conducted in accordance with criteria established in the National Contingency Plan. On October 3, 1993, the preliminary assessment was submitted to the EPA for review. On April 11, 1995 the EPA deleted the WVDP from the Federal Agency Hazardous Waste Compliance docket based on the determination that the site of the WVDP is not federally owned (60 FR 18474). No further activity pursuant to CERCLA Section 120 is anticipated. Site activities continue to be conducted in accordance with the WVDP Act and the RCRA corrective action process.

Emergency Planning and Community Right-to-Know Act (EPCRA)

The Emergency Planning and Community Right-to-Know Act is a statute enacted as Title III of the Superfund Amendments and Reauthorization Act (SARA). EPCRA was designed to create a working partnership between industry, business, state and local governments, public health and emergency response representatives, and interested citizens. EPCRA is intended to address concerns about the

effects of chemicals used, stored, and released in communities.

Executive Order 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements, requires all federal agencies to comply with the following EPCRA provisions: planning notification (Sections 302 and 303), extremely hazardous substance (EHS) release notification (Section 304), material safety data sheet (MSDS)/chemical inventory (Sections 311 and 312), and toxic release inventory (TRI) reporting (Section 313).

The WVDP complied with these provisions in 1995 as follows and as summarized in the EPCRA compliance table.

- In May 1995 a WVDP representative attended the annual meeting of the Cattaraugus County Local Emergency Planning Committee (Sections 302 - 303). Meetings held by Cattaraugus and Erie County Emergency Management Services were attended as well.
- In 1995 the WVDP complied with all necessary EPCRA reporting requirements. There were no releases that triggered any release notifications (Section 304). As such, no release notifications were required.
- Under Section 311 the WVDP reviews information on reportable chemicals on a quarterly basis. If a new hazardous chemical, which has not been previously reported, is stored on-site in an amount exceeding the threshold planning quantity, an MSDS and an updated hazardous chemical list is submitted to the local emergency response groups. This supplemental reporting ensures that the public and the emergency responders have current information about the chemicals on-site. All reports were submitted on time.
- Under Section 312, the WVDP submits annual reports to state and local emergency response

organizations and fire departments that specify the quantity, location, and hazard associated with chemicals stored on-site. In 1995 sixteen reportable chemicals above regulatory threshold planning quantities were stored on-site.

- Under Section 313, the WVDP submitted a toxic release inventory report to the EPA in 1995 for sulfuric acid use and release during calendar year 1994.

1995 EPCRA Compliance Table			
EPCRA 302-303:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.
Planning Notification			
EPCRA 304:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not Req.
EHS Release Notification			
EPCRA 311-312:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.
MSDS/Chemical Inventory			
EPCRA 313:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not Req.
TRI Reporting			

Clean Water Act (CWA)

The Clean Water Act of 1972, as amended, authorizes the EPA to regulate discharges to waters of the United States, including lakes and streams, through the National Pollutant Discharge Elimination System permit program. The EPA has delegated this authority to the state of New York, which issues State Pollutant Discharge Elimination System (SPDES) permits.

Section 404 of the CWA contains regulations for the development of areas in and adjacent to the waters of the United States. U.S. Supreme Court interpretations of Section 404 have resulted in the regulatory definition of waters of the United States to include wetlands. In addition, New York State has promulgated regulations at 6 NYCRR Parts 662 through 665 for the protection of freshwater wetlands. Section 404 provides stringent

controls for dredging activity and the disposal of dredged or fill material into these areas by granting the U.S. Army Corps of Engineers the authority to designate disposal areas and issue permits for these activities.

SPDES-permitted Outfalls

Point source effluent discharges to surface waters at the WVDP are permitted through the New York SPDES program. The WVDP has three SPDES-permitted outfalls, all of which discharge to Erdman Brook.

- Outfall 001 (WNSP001) receives the treated liquid discharge from the low-level waste treatment facility (LLWTF). The treated wastewater is held in lagoon 3, sampled and analyzed, and periodically released upon notifying NYSDEC.

In 1995 treated wastewater from the LLWTF was discharged in five batches that totaled 39 million liters (10.3 million gal) for the year. The annual average concentration of radioactivity at the point of release was 43% of the DOE's derived concentration guides (DCGs). (See also *Chapter 1* [p. 1-8].) None of the individual releases exceeded the DCGs. (See Table B-1 [p. B-3] in *Appendix B*.)

- Outfall 007 (WNSP007) receives the effluent discharge from the site sanitary and industrial wastewater treatment plant, which includes wastewater from sewage and various nonradioactive industrial and potable water treatment systems. The average daily flow in 1995 was 70,000 liters (18,500 gal).
- Outfall 008 (WNSP008) receives groundwater and storm water flow directed from the northeast side of the site's LLWTF lagoon system through a french drain. The average daily flow in 1995 was 8,200 liters (2,200 gal).

The site's SPDES permit, reissued February 1, 1994, includes additional chemical monitoring requirements and, in some cases, applies more stringent effluent limitations. A new calculation method that accounts for naturally occurring variations in iron in discharges from the site also was instituted. In addition, a method for augmenting the discharge at outfall 001 with raw (untreated) reservoir water was approved by NYSDEC as a means of ensuring that stream water quality standards for total dissolved solids are met.

A Schedule of Compliance in the permit itemizes a number of major compliance actions and required completion dates for each item. In accordance with the Schedule, the following actions were completed in 1995: the installation of equipment to monitor flow in Frank's Creek and an investigation and report on the source and extent of groundwater contamination from the north plateau and alternative methods for preventing further migration of the contamination. (See **Current Issues and Actions** [p. lvi].) In June 1995 the SPDES permit was modified to include chemical additives for the closed-loop cooling system and steam condensate. No additions to the Schedule of Compliance were required as a result of this modification.

The SPDES permit limits were exceeded six times in 1995 at outfall 007:

- The daily maximum limit of 0.1 mg/L for nitrite, measured as nitrogen, was exceeded in January and March at outfall 007. On January 13, 1995, the nitrite level was 0.89 mg/L. On March 3 and 8, 1995, the nitrite level was 11.6 mg/L and 2.5 mg/L, respectively. These increases were attributed to temperature fluctuations in the treatment system wastewater: decreases in temperature facilitate the conversion of chloramines to nitrogen trichloride and inhibit completion of the process that converts ammonia to nitrite and then nitrate. Efforts are currently under way to maintain the liquid levels in the outdoor, influent flow equalization basin as low as possible during winter months and to make other operational modifications to minimize the effect of temperature changes on treatment system performance.
- The five-day biochemical oxygen demand (BOD-5) daily maximum limit of 10.0 mg/L was exceeded at outfall 007 twice in February. On February 2, the BOD-5 level was 21.9 mg/L, and on February 8 the level was 178.0 mg/L. The daily average limit of 5.0 mg/L for BOD-5 was also exceeded: the daily average limit for February was 59.6 mg/L. These exceptions were attributed to bulking in the clarifier, which upsets the normal process of settling and compaction of sludge in the clarifier. There are predominantly two types of bacteria that affect the sludge: filamentous and floc-forming. The bulking is caused by an overgrowth of filamentous bacteria and/or inhibited growth of floc-forming bacteria. High sucrose water may have contributed to the excessive growth of the filamentous bacteria. The growth of floc-forming bacteria can be inhibited by low dissolved oxygen levels, a low food-to-microorganism ratio, and/or a nutrient deficiency in the wastewater. To offset this condition high sucrose water as an influent source wastestream was eliminated; the frequency for back-washing the effluent polishing filter was increased from once to twice per day; and air delivery to the aeration tanks was adjusted to increase dissolved oxygen levels in the sewage.
- On August 10, a pH of 8.7 standard units was recorded for outfall 007, which exceeded the upper limit of 8.5. Operational test data for grab samples of the effluent from the last treatment stage (i.e., dechlorination chamber) for the wastewater treatment facility indicated that the pH was 8.10 on August 9 and 11, 1995. In addition, a process control sample was taken on August 10, which indicated that the pH was less than 8.0 and within the normal operating range of the system for that month.

Given these results, the exceedance was attributed to a faulty reading or error in transcription of the reading.

No notices of violation were issued as a result of any permit exceedances. Although these exceedances did not result in any significant effect on the environment, the WVDP is continuing to work closely with NYSDEC to prevent their recurrence.

On March 28, 1995, NYSDEC conducted its annual inspection of the SPDES outfalls, waste water treatment facilities, and data management system at the WVDP. At the request of the inspector, a tour was given of the SPDES outfalls, the sanitary and wastewater treatment facility, and the north plateau. No violations were noted during the inspection.

Wetlands

In 1993, a wetlands investigation was conducted under Section 404 of the CWA, which identified forty-five wetland units on a 550-acre area that includes the 200-acre WVDP site and adjacent parcels north, south, and east of the site. A report documenting the wetlands investigation and delineation was submitted to the U.S. Army Corps of Engineers and NYSDEC in June 1994.

NYSDEC reviewed the report and inspected the site, determining that a group of eight contiguous wetlands met the criteria for regulation as a single unit. The grouped wetlands will be included on the next proposed amendment to the official New York State Freshwater Wetlands Map for Cattaraugus County. Any work conducted within a mapped wetland or within 100 feet of a mapped wetland requires NYSDEC approval. The WVDP notifies the U.S. Army Corps of Engineers and NYSDEC of proposed actions that have the potential to affect these wetlands and that are not specifically exempted from regulation or notification. No notifications were required in 1995.

Petroleum and Chemical Product Spill Reporting

The WVDP has a Spill Notification and Reporting Policy to ensure that all spills are properly managed, documented, and remediated in accordance with applicable regulations. The policy identifies the departmental responsibilities for spill management and illustrates the proper spill control and clean-up procedures. The policy stresses the responsibility of each employee to notify the main plant operations shift supervisor upon discovery of a spill. This first-line reporting requirement helps to ensure that spills do not go unnoticed.

Under an agreement with NYSDEC, the WVDP reports on-site spills of petroleum products of 10 gallons or less onto an impervious surface (such as blacktop) in a monthly log. Spills greater than 10 gallons that do not affect ground- or surface water or enter a drainage system must be reported to NYSDEC within twenty-four hours and entered in the monthly log. Spills of any amount that travel to waters of the state (i.e., groundwater, surface water, drainage systems) must be reported immediately to the NYSDEC spill hotline and entered in the monthly log. The WVDP also reports spills of hazardous substances in accordance with reporting requirements under CERCLA, EPCRA, the CAA, RCRA, and New York's Hazardous Waste Management Program.

Petroleum and chemical-product spills were entered in the monthly log throughout the year. However, under the reporting protocol, no spills required immediate notification of NYSDEC. All spills were cleaned up in a timely fashion in accordance with the WVDP Spill Notification and Reporting Policy, and the collected materials were characterized for shipment to a TSDF. None of the spills resulted in any adverse environmental impact.

Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act requires that each federal agency having jurisdiction over a federally owned or maintained public water system must comply with all federal, state, and local requirements regarding safe drinking water. The drinking water quality program in the state of New York is administered by NYSDOH through county health departments.

The WVDP obtains its drinking water from surface water reservoirs on the Western New York Nuclear Service Center (WNYNSC) site and is considered a nontransient, noncommunity public water supplier. The Project's drinking water treatment facility purifies the water by clarification, filtration, and chlorination before it is distributed on-site.

As an operator of a drinking water supply system, the WVDP routinely collects drinking water samples (organic and inorganic) to monitor water quality. The results of these analyses are reported to the Cattaraugus County Health Department. In turn, the Cattaraugus County Health Department also independently collects a monthly sample of WVDP drinking water to determine bacterial and residual chlorine content. The microbiological samples analyzed in 1995 produced satisfactory results and the free chlorine residual measurements in the distribution system were positive on all occasions, indicating proper disinfection. In 1993, 1994, and 1995, the WVDP sampled and tested for lead and copper in the site's drinking water in accordance with EPA and NYSDOH regulations. The analytical results to date show lead levels to be above the action level of 15 µg/L at several locations in the distribution system. NYSDOH regulations require an evaluation of potential water treatment actions and the preparation of a Corrosion Control Plan. In March 1994 the WVDP submitted its plan to the Cattaraugus County Health Department. The Corrosion Control Plan was reviewed by the Cattaraugus County Health Department and

NYSDOH. Based on the review, NYSDOH recommended that the WVDP adjust the pH to control lead levels in the water distribution system. The WVDP is currently implementing a program to reduce the level of those metals in the treated water.

Employees at the WVDP are made aware of the elevated lead levels through a public education program. Though not required, notices have been posted at locations where elevated lead levels have been measured advising employees not to consume water from that location.

Other than the lead action-level exceedance noted above, monitoring results in 1995 indicate that the Project's drinking water meets NYSDOH drinking water quality standards.

The Cattaraugus County Health Department conducted its annual inspection of the WVDP water supply system on November 7, 1995. No detrimental findings or notices of violation were issued.

There were several changes in the 1995 site drinking water program:

- A new water clarifier was installed and the temporary clarifier dismantled.
- Plans to install a new potable water storage tank were approved. The installation is scheduled for 1996.
- In August 1995, after conducting a synthetic organic chemicals analysis and two watershed inspections, the Cattaraugus County Health Department determined that the WVDP water supply was not vulnerable to synthetic organic chemicals contamination. As a result, the WVDP is not required to conduct any additional synthetic organic chemical sampling.

Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act of 1976 regulates the manufacture, processing, distribution, and use of chemicals, including polychlorinated biphenyls (PCBs). In 1995 the WVDP continued to manage radioactively contaminated PCB wastes as radioactive mixed wastes because PCBs are a listed hazardous waste in New York State. These wastes originated from a dismantled hydraulic power unit inside the former reprocessing facility and from two radiologically contaminated capacitors that contained PCB fluids. To comply with TSCA, the WVDP maintains an annual document log that details PCB use and storage on-site and any changes in storage or disposal status.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act of 1969, as amended, establishes a national policy for the protection of the environment (Title I). Its goals are to prevent or eliminate potential damage to the environment that could arise from federal legislative actions or proposed federal projects. The President's Council on Environmental Quality (CEQ), established under Title II of NEPA, sets the policy to fulfill these goals. The CEQ regulations for implementing NEPA are promulgated at 40 CFR Parts 1500 - 1508.

Since 1990 the DOE has been revising its NEPA-compliance procedures and guidelines. On May 26, 1992, the CEQ approved DOE's procedures, which are promulgated at 10 CFR Part 1021. During 1995 the WVDP participated in the DOE's initiative to revise DOE NEPA procedures. On January 20, 1996, the DOE published its proposed amendments to 10 CFR Part 1021 in the Federal Register for a 45-day public comment period. After incorporating public comments, the DOE plans to publish the final rule in June 1996. Until that time, the WVDP continues to follow

the existing DOE NEPA procedures (10 CFR Part 1021).

NEPA requires that all federal agencies that propose actions having the potential to significantly affect the quality of human health and the environment prepare detailed environmental statements. The DOE implements NEPA by requiring an environmental review of all proposed actions (10 CFR Part 1021). If a proposed action will have an insignificant effect on the environment, it is excluded from further environmental review under a categorical exclusion. If a proposed action will have the potential to affect the environment, then it requires an environmental assessment. If the results of the assessment indicate that the action will have no significant effect, then a finding of no significant impact is issued. A proposed action that has the potential to significantly affect the environment requires an environmental impact statement.

Both environmental assessments and environmental impact statements are made available to the public. NEPA requires that the public be notified and given the opportunity to review and comment on environmental impact statements. In 1993 the Secretary of Energy established guidelines that provide the public the opportunity to review and comment on environmental assessments.

1995 NEPA Activities

Eight proposed actions were reviewed under the DOE NEPA-implementing regulations in 1995. The proposed actions included activities such as routine site maintenance, trailer removal, and upgrades to on-site petroleum storage tanks. All eight of the proposed actions were categorically excluded.

In 1994 the WVDP prepared two environmental assessments. The first assessment evaluated the construction and operation of a contaminated soil consolidation area to provide temporary storage

of low-level radiologically contaminated soil that has been excavated at the WVDP. On July 10, 1995, the DOE approved this environmental assessment and issued a finding of no significant impact for the proposed action.

The second environmental assessment evaluated a proposal for off-site, commercial treatment of Class A low-level radioactive waste and low-level radioactive mixed waste generated by the WVDP. The proposed action involves shipping the waste from the WVDP to a commercial facility for volume-reduction and then shipping the volume-reduced waste back to the WVDP. The action was proposed to make full use of existing storage facilities at the WVDP and to minimize the construction of new waste storage. On November 29, 1995, after responding to public comments on the proposed action, the DOE approved the environmental assessment and issued a finding of no significant impact.

Preparation of the draft environmental impact statement for completion of the WVDP and closure or long-term management of the facilities at the WNYNSC continued in 1995. Five alternatives are being evaluated for the statement. The draft environmental impact statement was submitted for public review and comment on March 22, 1996.

In June 1993 the Federal Court for the District of Idaho ruled that the DOE was required to prepare an environmental impact statement for spent nuclear fuel management. In June 1995 the DOE issued a record of decision for DOE/EIS-0203, Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement, which announced the department-wide decision to regionalize spent nuclear fuel management by fuel type for DOE-owned spent nuclear fuel from 1995 until the year 2035. Regionalized management will result in shipment of the fuel assemblies

that remain at the WVDP to the Idaho National Engineering Laboratory (INEL) for long-term storage.

To fulfill all the requirements established by the court, however, the DOE and the Attorney General of Idaho had to reach a settlement agreement. The settlement agreement that was reached on October 16, 1995 establishes terms and conditions for the receipt of spent nuclear fuel at INEL. These conditions apply to DOE actions at INEL and elsewhere in the DOE complex. Provided that the terms and conditions are met by DOE and found acceptable by the state of Idaho, the West Valley fuel assemblies could be shipped to INEL as early as January 1, 2001.

Summary of Permits

The environmental permits in effect at the WVDP in 1995 are listed in *Appendix B*, Table B-3 (p. B-5 through B-9).

Current Issues and Actions

RCRA Facility Investigation

Identifying and evaluating SWMUs at the WVDP to ensure compliance with the requirements of the RCRA 3008(h) Administrative Order on Consent continued in 1995. Two draft SWMU assessments and seven draft RFI reports were submitted to the EPA and NYSDEC. The current focus of the RFI program is on finalizing these reports and submitting the two RFI draft reports that remain.

Clean Water Act

SPDES Permit

The SPDES permit includes a Schedule of Compliance, which itemizes a number of major compliance actions and each required completion date. In accordance with the Schedule, equipment

to augment and monitor flow in Frank's Creek was installed and an investigation into the source and extent of contamination in the north plateau and the identification of potential contaminant control methods was conducted. In June 1995 the SPDES permit was modified to include chemical additives for the closed-loop cooling system and steam condensate. No additions to the Schedule of Compliance were required as a result of this modification.

Flow Augmentation

During the summer of 1995 a flow measurement device (Parshall flume) was installed in Frank's Creek to measure flow and maintain compliance with a new permit limit for total dissolved solids in the stream. Approval to install these devices was received from NYSDEC and the U.S. Army Corps of Engineers in November 1994. The approval, a permit under the Nationwide Permit Program for the development of areas adjacent to waters of the United States (33 CFR Part 330), was received from the Corps. Flow augmentation was not required in 1995 because the measured level of total dissolved solids was below the limit specified in the SPDES permit.

Groundwater Investigation

Increased levels of gross beta radioactivity in water seeping from a localized area of wet ground northeast of the process building were identified in December 1993. Strontium-90 was identified as the primary radionuclide responsible for the elevated gross beta levels.

In 1994 an investigation was conducted to determine the nature and extent of the groundwater contamination and to identify potential sources. The primary source of the contamination was traced to an area in the southwest corner of the process building where acid recovery operations had been conducted in the past as part of nuclear fuel reprocessing. In April 1995 a report was

prepared to document the investigation and this information was reported to NYSDEC.

In November 1995 the WVDP installed a groundwater pump-and-treat system to mitigate the movement of strontium-90 contamination in the groundwater. Two 15-foot-deep recovery wells, installed near the leading edge of the groundwater plume, collect contaminated groundwater from the underlying sand and gravel. The treatment system uses an ion-exchange column to remove the strontium-90 from the groundwater. The system is operated in conjunction with the WVDP low-level waste treatment facility. After the groundwater is treated, it is discharged to lagoons 2, 4, or 5 at the low-level waste treatment facility. Approximately 935,000 liters (247,000 gallons) were processed through the system in 1995.

The pump-and-treat system is currently being evaluated along with other technologies to determine if there are more effective methods for treating the groundwater.

Storm Water Discharge Permit

In 1992 the WVDP submitted an application for an individual permit for storm water discharges associated with industrial activity. The application included characteristic analytical results from sampling conducted at three locations in 1991. These monitoring locations comprised all storm water discharged from the WVDP but also included base flow for the receiving water at the sample points. NYSDEC requested that the sampling points be moved to locations with no base flow to differentiate the quality of the storm water discharges from the receiving water. In response to the request, thirty-three on-site monitoring points were identified in 1994. Clean Water Act regulations allow petitioning to group identical discharges for monitoring and reporting. NYSDEC accepted the WVDP's petition to group several of the discharge points.

As such, eleven storm water outfalls were monitored in 1995. Two samples were collected from each outfall, a first-flush sample collected within roughly the first half-hour of the storm event and a flow-weighted composite collected during the first three hours of the storm event. The storm water samples were analyzed for parameters identified in the existing SPDES permit. In 1996 the WVDP will submit a new storm water discharge permit application that identifies these outfalls.

Project Assessment Activities in 1995

As the primary contractor for the DOE at the WVDP, WVNS conducted more than eighty-nine reviews of environmentally related activities in 1995. These included four assessments, seventy-one surveillances, and fourteen line management self-assessments. (See p. 4 of the *Glossary*.) In addition, seven reviews were conducted by organizations external to the WVDP such as the NRC, NYSDEC, and the EPA. Overall results of the reviews reflect continuing, well-managed environmental programs at the WVDP. Significant external environmental overview activities in 1995 included an operational readiness review by the U.S. Department of Energy, Office of Environmental Management (DOE-EM); a radiological monitoring visit by the NRC; a routine annual inspection by NYSDEC for compliance with the Clean Air Act; inspections by the EPA and NYSDEC for compliance with RCRA; an inspection by NYSDEC for compliance with SPDES requirements; and an annual inspection of the WVDP potable water supply system by the Cattaraugus County Health Department. These appraisals and inspections did not identify any environmental program findings (see p. 3 of the *Glossary*) and further demonstrated the WVDP's commitment to protection of the environment.

1995 U.S. Department of Energy Operational Readiness Review

Before initiating radioactive operations WVNS conducted line management self-assessments and an operational readiness review in accordance with DOE Order 5480.31, Startup and Restart of Nuclear Facilities. Between February and September 1995, WVNS completed seven line management self-assessments, which included twenty-six separate lines of inquiry for environmental planning, permitting, notification, and monitoring as well as for the personnel and procedures associated with fulfilling these requirements. The seven assessments focused on hazardous chemical use, melter start-up, tank farm isolation, off-gas system verification, analytical and process chemistry laboratory readiness, and integrated operations. No environmental program findings were identified.

On September 30, 1995, WVNS declared readiness for nonradioactive operations to demonstrate remote operations of the vitrification system (i.e., integrated cold operations). During October, in parallel with the integrated run, WVNS completed its own operational readiness review. On October 31, 1995, WVNS declared readiness to transfer radioactive waste from the tank farm to the vitrification facility, contingent upon closure of findings and open items identified in the assessments and operational readiness review.

From November 1 through 17, 1995, seventeen representatives of DOE-EM conducted an operational readiness review to determine if West Valley was ready to conduct radioactive operations. In addition to conducting employee interviews and field observations, the DOE team reviewed the WVNS line-management self-assessments, the WVNS operational readiness review, and other documentation. Eight observations and twenty-three findings were identified. WVNS and the West Valley Area Office are currently evaluating the causes for the findings and preparing corrective action plans for submis-

sion to DOE-EM. None of the observations or findings pertained to environmental programs.

1995 U.S. Nuclear Regulatory Commission Monitoring Visit

From June 19 through 23, 1995, the NRC visited the WVDP to review programs for vitrification facility operations. The NRC examined the major liquid and gaseous release points from the WVDP site, the airborne treatment systems and sampling/monitoring capability of the major airborne release pathways associated with the vitrification process, the WVNS effluent sampling and analytical procedures and calibration techniques, representative liquid effluent sampling stations, results of the 1993 and 1994 environmental monitoring program, laboratory operations and quality assurance/quality control programs, and the WVNS line management self-assessments and operational readiness review for radioactive operations. As a result of the visit, the NRC monitor concluded that WVNS has established viable programs for protecting public health and safety. The monitor also made five technical recommendations for enhancing these programs.

Follow-up to the 1994 U.S. Department of Energy Audit

In April 1994 the DOE Idaho Operations Office conducted a comprehensive environmental, safety, health, and quality assurance functional appraisal.

The audit team evaluated environmental programs, construction safety, fire protection, nuclear safety, emergency preparedness, conduct of operations, radiological controls, industrial hygiene, firearms safety, and transportation programs. Performance-based criteria were used to assess the overall effectiveness of the evaluated programs. The appraisal identified eleven findings, twenty-three observations, and four concerns. No deficiencies were found that repre-

sented conditions or actions posing a significant threat to public health or the environment.

WVNS responded to the audit items in an action plan, which was submitted to the DOE on September 9, 1994. All items not resolved in the action plan are tracked through closure in the WVNS open items tracking system. Currently, one audit item, unrelated to environmental programs, remains open.

Follow-up to the U.S. Department of Energy 1991 and 1992 Environmental Audits

In December 1992 the WVDP received the final report by the DOE Headquarters Office of Environmental Audit on the 1992 environmental audit. The WVDP completed its final action plan and resubmitted it to DOE Headquarters in February 1993. All of the identified action items were resolved. Both the 1991 and 1992 audits have been formally closed.