
ENVIRONMENTAL COMPLIANCE SUMMARY

CALENDAR YEAR 1996

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 these materials into a glass structure. The treatment process is regulated by various federal and state laws 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.

The major federal environmental laws and regulations 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. 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.

In addition, because the emission of radiological and nonradiological materials from an active facility cannot be completely prevented, the EPA, NYSDEC, and the DOE have established 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 amounts 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. In general,

the permits describe the discharge points, list the limits on those pollutants likely to be present, and define the sampling and analysis schedule.

Environmental inspections and audits are conducted routinely by the EPA, NYSDEC, the New York State Department of Health (NYSDOH), and the Cattaraugus County Health Department. On-site and off-site radiological monitoring in 1996 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 exceptions, also commonly called exceedances, are described in more detail under the **Clean Water Act** section [p.liv]). 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 in 1996. 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.

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 1996.

Compliance Status

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act (RCRA) 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. Under RCRA, generators are responsible for ensuring the proper treatment, storage, and disposal of their wastes.

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 enforce these regulations to NYSDEC. In May 1990 the state of New York was authorized by the EPA to administer a radioactive mixed waste program. The U.S. Department of Transportation (DOT) 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 so 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 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; however, no updates were needed in 1996.

Hazardous Waste Management Program

In order to dispose of hazardous wastes generated from on-site activities, the WVDP uses permitted transportation services to ship RCRA-regulated wastes to permitted treatment, storage, or

disposal facilities (TSDFs). Using these services, the WVDP shipped approximately 69.8 metric tons (76.9 tons) of nonradioactive, hazardous waste off-site in 1996. Of this amount, 0.8 metric tons (0.9 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 1996.

Hazardous waste activities must be reported to NYSDEC every year through the submittal of a hazardous waste report. This report summarizes the hazardous waste activities for the previous year, specifies the quantities of hazardous waste generated, and identifies the TSDFs used. 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 most recent hazardous waste-reduction plan was submitted in 1996.

Annual inspections to assess compliance with hazardous waste regulations were conducted by NYSDEC (March 14, 1996) and the EPA (July 24, 1996). No deficiencies were noted during the inspections.

Nonhazardous, Regulated Waste Management Program

The WVDP transported approximately 27.4 metric tons (30.2 tons) of nonradioactive, nonhazardous material off-site to solid waste management facilities in 1996. Of this amount, 3.1 metric tons (3.4 tons) were recycled or reclaimed. The industrial waste materials

included items such as concrete, asbestos debris, monitoring-well purge water, and neutralized acids and bases from laboratory and chemical mixing operations. Some of the regulated materials recycled or reclaimed included lead acid batteries and nonhazardous oils. In 1996, the WVDP also shipped approximately 2,000 metric tons (2,200 tons) of digested sludge and untreated wastewater from the site sanitary and industrial wastewater treatment facility to the Buffalo Sewer Authority for treatment.

Radioactive Mixed Waste (RMW) Management Program

Radioactive mixed waste (RMW) contains both a radioactive component, regulated under the Atomic Energy Act (AEA), and a hazardous component, regulated under RCRA. Both the EPA and NYSDEC oversee RMW management at the WVDP. To address the management of the hazardous component of RMW, 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 requirements for managing the hazardous component of the RMW, e.g., regulatory compliance with the Land Disposal Restrictions (LDR) of RCRA for RMW, specifies particular storage requirements for RMW, and requires the characterization of historical wastes in storage at the WVDP. Characterization of historical wastes continued during 1996.

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 RMW inventories and to enter into agreements with regulatory agencies that require 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 RMW stream as well as information on the preferred treatment method for the waste. The Plan Volume contains proposed schedules for treating the RMW to meet the LDR requirements of RCRA. Each submittal to NYSDEC underwent a public comment period during which input was solicited from WVDP stakeholders.

The DOE and NYSDEC entered into a consent order on September 3, 1996, that requires the completion of the milestones identified in the Plan Volume. The WVDP began implementing the site treatment plan immediately. All milestones for calendar year 1996 were met.

RCRA Facility Investigation (RFI) Program

The DOE and NYSERDA entered into a RCRA 3008(h) Administrative Order on Consent with NYSDEC and the EPA in March 1992. The Consent Order requires NYSERDA and the DOE's West Valley Demonstration Project Office (DOE-WV) to conduct RCRA facility investigations at solid waste management units (SWMUs) in order 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 to each other, 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 a RCRA facility investigation is to collect and evaluate information to determine which of the following actions are appropriate for each SWMU or SSWMU in accordance with the Consent Order: no further action; a corrective measures study; or additional investigations to support one of the 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 and collected and analyzed samples of surface soil, subsurface soil, sediment, and groundwater.

In 1996 the WVDP continued to identify and evaluate SWMUs to ensure compliance with the requirements of the RCRA 3008(h) Administrative Order on Consent. (See **Current Issues and Actions** [p.lviii]). Of the twelve SSWMUs, five have been identified to date as requiring no further action: #2, miscellaneous small units; #6, the low-level waste storage area; #7, the chemical process cell waste storage area; #10, the radwaste treatment system drum cell; and #12, the hazardous waste storage lockers.

Similarly, four SSWMUs have been identified as requiring no immediate action other than continued groundwater monitoring: #1, the low-level waste treatment facility; #8, the construction and demolition debris landfill; #9, the Nuclear Regulatory Commission (NRC)-licensed disposal area; and #11, the New York State-licensed disposal area. Determinations for the three remaining SSWMUs will be made in 1997 following EPA and NYSDEC review of the associated draft RFI reports.

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. At the same time, NYSDEC and the EPA requested additional information on the remaining eight rooms. In February 1995 the WVDP provided NYSDEC and the EPA with the information requested. A determination concerning these rooms will be made following review of the three remaining SSWMU draft RFI reports that the WVDP previously submitted to the EPA and NYSDEC.

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 31, 1999. Similarly, 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 1996: a 26% reduction in the generation of low-level radioactive waste, radioactive mixed waste, and hazardous waste; an 18% reduction in industrial waste; and a 10% reduction in sanitary waste.

The WVDP greatly exceeded the 1996 reduction goals for all six waste categories. Low-level radioactive waste generation was reduced by 91%, radioactive mixed waste generation by

68%, and hazardous waste generation by 66%. In a similar manner, industrial waste generation was reduced by 50% and sanitary waste generation by 44%.

Specific accomplishments in waste minimization and pollution prevention during 1996 included the following:

- 203.0 metric tons (224.0 tons) of paper were recycled
- 152.9 metric tons (168.5 tons) of galvanized steel, carbon steel, stainless steel, and aluminum were recycled
- 0.8 metric tons (0.9 tons) of hazardous waste were recycled
- 3.1 metric tons (3.4 tons) of nonhazardous, regulated waste were recycled.

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 ten-year grace period for installing the upgrades.

New York State also regulates underground storage tanks through two programs, petroleum bulk storage (Title 6, New York Official Compilation of Rules and Regulations [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. A fourth 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, 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. An annual test for tightness and integrity of the 2,000-gallon underground storage tanks took place on October 3, 1996. The 550-gallon underground storage tank does not require tightness or integrity testing because of its integral leak detection system.

In accordance with EPA underground storage tank regulations, these underground tanks must be upgraded to meet the requirements for new or substantially modified underground storage tanks (e.g., corrosion protection, interior lining, overfill protection) by December 22, 1998 or be permanently closed. The three 2,000-gallon underground tanks will be removed and the 550-gallon underground tank upgraded prior to that date.

New York State-regulated Aboveground Storage Tanks

The state of New York regulates aboveground petroleum bulk storage under 6 NYCRR Parts 612, 613, and 614. Aboveground hazardous bulk 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 daily, annual, and five-year inspections of chemical tanks. Furthermore, petroleum tank fill ports must be color-coded, and chemical tanks labeled to indicate the product stored.

An aboveground chemical storage tank, used to store nitric acid, was permanently closed in 1996. At the end of 1996 the registration included nine aboveground petroleum tanks and fourteen aboveground chemical storage tanks. Three of the petroleum tanks contain No. 2 fuel oil, one contains unleaded gasoline, and the remainder contain diesel fuel. Eleven 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 every month. In December 1996, an inspection of all aboveground, hazardous substance storage tanks was conducted to fulfill the requirements for annual inspection (6 NYCRR Part 598.7(c)). No violations were noted during the inspection.

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 sterilized with an autoclave by the firm to remove the associated hazard and then disposed. Approximately 21.3 kilograms (47 lbs) of medical waste were generated and disposed in 1996.

Clean Air Act (CAA)

The Clean Air Act (CAA), as amended, establishes a framework for the EPA to regulate air emissions from both stationary and mobile sources. In 1996 NYSDEC adopted regulations to implement new EPA Clean Air Act requirements. In New York State either the EPA or NYSDEC issues permits for stationary sources emitting regulated pollutants, including hazardous air pollutants. Sources requiring permits are those that emit a regulated pollutant in quantities above a predetermined threshold that is from a particular source such as 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 40 CFR Part 61, the National Emission Standards for Hazardous Air Pollutants (NESHAP). The WVDP currently has permits for six radionuclide sources. In addition, the WVDP has interim approval 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 regulations. Calculations to demonstrate compliance with NESHAP radioactive dose limits showed 1996 doses to be less than 0.1 % of the 10 millirem standard.

Nonradiological sources of air emissions are regulated by NYSDEC. The WVDP has twenty-nine certificates-to-operate (COs) for nonradiological point sources. On June 7, 1996, NYSDEC filed amendments to Title 6 NYCRR Part 201, Construction and Operating Permits. The amendments went into effect on July 7, 1996. On the effective date all valid COs for a given facility were extended indefinitely. As such, the WVDP's twenty-nine COs were extended without expiration.

The vitrification facility off-gas system permit-to-construct (PC) was extended in 1995 to allow for the completion of construction and start-up testing. A nitrogen oxides (NO_x) Relative Accuracy Test Audit (RATA) conducted on May 30, 1996 verified the level of NO_x emissions and the accuracy of the monitoring system for the stack. Representatives from NYSDEC Region 9, Division of Air Resources, visited the site to observe the NO_x RATA. On June 14, 1996 the WVDP submitted a letter to NYSDEC requesting that the PC be converted to a CO.

The air permits that were in effect at the WVDP in 1996 are listed in *Appendix B*, Table B-3 (pp. B-5 through B-9).

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

The Emergency Planning and Community Right-to-Know Act (EPCRA) was 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 - 303), extremely hazardous substance (EHS) release notification (Section 304), material safety data sheet (MSDS)/chemical inventory (Sections 311 - 312), and toxic release inventory (TRI) reporting (Section 313).

The WVDP complied with these provisions in 1996 as follows and as summarized in the table below.

- In May and October 1996, WVDP representatives attended the semiannual meetings of the Cattaraugus County Local Emergency Planning Committee (EPCRA Section 302-303). At the meeting in May, the 1996 revision to the SARA Title III Hazardous Materials Response Plan was distributed. The October meeting was hosted by the WVDP. WVDP representatives also attended meetings held by Cattaraugus and Erie County Emergency Management Services.

- In 1996 the WVDP complied with all necessary EPCRA reporting requirements. There were no releases that triggered any release notifications (EPCRA Section 304).

- Under EPCRA Section 311 the WVDP reviews information about reportable chemicals every quarter. If a hazardous chemical, which has not been previously reported, becomes present on-site in an amount exceeding the threshold planning quantity, an MSDS and an updated hazardous chemical list is submitted to the state and local emergency response groups. This supplemental reporting ensures that the public and the emergency responders have current information about the chemicals on-site. In 1996, the WVDP made two Section 311 notifications, one for liquid nitrogen and the other for liquid carbon dioxide.

- Under EPCRA Section 312 the WVDP submits annual reports to state and local emergency response organizations and fire departments that specify the quantity, location, and hazards associated with chemicals stored on-site. Sixteen reportable chemicals above threshold planning quantities were stored on-site in 1996.

- Under EPCRA Section 313, the WVDP submitted a toxic release inventory (TRI) report to the EPA in 1996 for nitric acid during calendar year 1995.

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

All the SARA notifications were submitted within the required time frames.

Clean Water Act (CWA)

Section 402 of the Clean Water Act (CWA) of 1972, as amended, authorizes the EPA to regulate discharges of pollutants to surface water and groundwater through a National Pollutant Discharge

Elimination System (NPDES) 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. Supreme Court interpretations of Section 404 have resulted in the inclusion of wetlands in the regulatory definition of waters of the United States. (New York State also has promulgated regulations at 6 NYCRR Parts 662 through 665 for the protection of freshwater wetlands.) Section 404 provides regulatory controls for 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.

In addition, Section 401 of the CWA requires applicants for a federal license or permit pursuant to Section 404 to obtain certification from the state that the proposed discharge complies with effluent and water quality-related limitations, guidelines, and national standards of performance identified under the CWA such as Sections 301, 302, 303, 306, 307, and 511(c).

SPDES-permitted Outfalls

Point source liquid effluent discharges to surface waters of New York State are permitted through the New York SPDES program. The WVDP has four SPDES-permitted outfalls, which discharge to Erdman Brook and Frank's Creek.

- Outfall 001 (WNSP001) discharges treated wastewater from the low-level waste treatment facility (LLWTF) and the groundwater pump-and-treat system (i.e., the north plateau groundwater recovery system. See **Current Issues and Actions**, *Groundwater Treatment*

[p.lviii] and *Chapter 3, Groundwater Monitoring*). The treated wastewater is held in lagoon 3, sampled and analyzed, and periodically released upon notification of NYSDEC.

In 1996 the treated wastewater from the LLWTF was discharged at WNSP001 in seven batches that totaled 50.6 million liters (13.4 million gal) for the year. The annual average concentration of radioactivity at the point of release was 35% of the DOE derived concentration guides (DCGs). None of the individual releases exceeded the DCGs.

- Outfall 007 (WNSP007) discharges the effluent from the site sanitary and industrial wastewater treatment facility, which treats sewage and various nonradioactive wastewaters from physical plant systems (e.g., water plant production residuals and boiler blowdown). The average daily flow at WNSP007 in 1996 was 76,100 liters (20,100 gal).

- Outfall 008 (WNSP008) discharges 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 at WNSP008 in 1996 was 8,300 liters (2,200 gal).

- Outfall 116 represents the confluence of outfalls 001, 007, and 008 as well as wet weather flows (e.g., storm water run-off), groundwater surface seepage, and augmentation water (i.e., untreated water from the site reservoirs). The outfall is not a physical monitoring location but the point where compliance with the SPDES permit limit for total dissolved solids (TDS) is maintained through calculation using monitoring data from these upstream sources.

The WVDP obtained storm water characterization data through sampling and analysis in 1991 and submitted a storm water discharge permit

application to NYSDEC on September 30, 1992. In early 1994, NYSDEC indicated that any future storm water discharge requirements would be incorporated into the WVDP's existing SPDES permit. In response to NYSDEC comments on the permit application, the WVDP monitored the discharge at eleven storm water outfalls in 1995. In April 1996 the WVDP submitted a new SPDES permit application that identified these outfalls. In March 1996 the WVDP submitted to NYSDEC an application for a SPDES permit modification to increase the average flow of effluent from the pump-and-treat system from approximately 9.8 million liters (2.6 million gal) a year to approximately 39.7 million liters (10.5 million gal) a year. (See **Current Issues and Actions** [p.lviii].)

The SPDES permit limits were exceeded twice at outfall 001 in 1996. Although these exceedances did not have any significant adverse effect on the environment, the WVDP is continuing to work with NYSDEC to prevent the recurrence of these events. These exceedances are summarized in the table below.

- On August 22, nitrite was measured at 0.24 mg/L, which exceeded the permit limit of 0.1 mg/L. A malfunction in the chemical addition system resulted in the addition of excess acid to the effluent holding lagoon, lagoon 3. The low pH from this addition upset the chemical oxidation and natural biological nitrification processes that convert ammonia to nitrite and nitrite to nitrate. As a result, the nitrite

intermediate became elevated. The conversion processes returned to normal conditions as the pH naturally rose. A chemical metering pump has been installed to provide better pH control.

- On August 27, a pH of 5.21 standard units (s.u.) was recorded, which was below the allowable lower limit of 6.5 s.u. The exceedance resulted from a failure to close the discharge valve during pH adjustment to allow for sufficient mixing of the treated water held in lagoon 3. During subsequent discharges the discharge valve will be closed during pH adjustments.

The permit exceedances reported for these parameters did not result in NYSDEC issuing any notices of violation.

On March 29, 1996 NYSDEC conducted its annual facility inspection. At the request of the inspector, the SPDES outfalls, the sanitary and industrial wastewater treatment facility, and the LLWTF were toured. No violations were noted during the inspection.

Wetlands

In 1993 a wetlands investigation was conducted under Section 404 of the CWA, which identified fifty-one 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

Permit Type	Outfall No.	Parameter	Date(s) Exceeded	Description/Solution
SPDES	SP001	Nitrite	August 22, 1996	Low pH inhibited nitrification process/A chemical metering pump has been installed to provide better pH control
SPDES	SP001	pH	August 27, 1996	Overcompensation for rising pH/ During subsequent discharges the discharge valve will be closed during pH adjustments

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 group of eight contiguous wetland units, delineated by NYSDEC as a linked unit, will be included on the next available 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 New York freshwater wetland requires NYSDEC approval. The WVDP notifies the U.S. Army Corps of Engineers and NYSDEC of those proposed actions that have the potential to affect any of the fifty-one wetland units and that are not specifically exempted from regulation or notification. No notifications were required in 1996.

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. This policy identifies the departmental responsibilities for spill management and illustrates the proper spill control 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 are properly evaluated and managed.

Under a June 1996 agreement with NYSDEC regarding the agency's petroleum spill-reporting protocol, the WVDP is not required to report spills of petroleum products of 5 gallons or less onto an impervious surface (e.g., asphalt or concrete) that are cleaned up within two hours of

discovery. Spills of petroleum products of 5 gallons or less onto the ground are entered in a monthly petroleum spill log. Spills of any amount that travel to waters of the state (i.e., surface water, drainage systems, or groundwater) must be reported immediately to the NYSDEC spill hotline and entered in the monthly log. Spills of petroleum products that enter any navigable water of New York State are reported to the National Response Center within two hours of discovery. Each monthly petroleum spill log is submitted to NYSDEC on the fifteenth day of the following month. In addition to the NYSDEC spill- and release-reporting regulations, the WVDP also reports spills of hazardous substances in accordance with reporting requirements under RCRA, the CAA, EPCRA, the CWA, and the Toxic Substances Control Act (TSCA).

Petroleum- and chemical-product spills were logged and evaluated throughout the year. Two petroleum spills required immediate notification of NYSDEC. No chemical spills exceeded the reportable quantities and, therefore, required no reporting. All the spills were cleaned up in a timely fashion in accordance with the WVDP Spill Notification and Reporting Policy, and the clean-up debris was characterized and dispositioned appropriately. None of the spills resulted in any adverse environmental impact.

Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA) 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 non-transient, non-community 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 collects routine drinking water samples to monitor organic and inorganic water quality. The results of these analyses are reported to the Cattaraugus County Health Department. The Cattaraugus County Health Department also independently collects a sample of WVDP drinking water every month to determine bacterial and residual chlorine content. Analysis of the microbiological samples collected in 1996 produced satisfactory results and the free chlorine residual measurements in the distribution system were positive on all occasions, indicating proper disinfection.

From 1993 to 1996 the WVDP conducted annual sampling and testing for lead and copper in the site's drinking water in accordance with EPA and NYSDOH regulations. Previous analytical results showed lead levels to be above the action level of $15\mu\text{g}/\text{L}$ at several locations in the distribution system. In 1996, the WVDP replaced existing water faucets with lead-free faucets in an effort to lower the lead levels. NYSDOH regulations require an evaluation of potential water treatment actions and the preparation of a corrosion control plan for water systems that do not meet the lead and copper action levels. Because two consecutive lead and copper sample rounds were below the EPA action levels in 1996, the site was not required to implement the state-designated corrosion control program. In addition, the WVDP was allowed to reduce the sampling frequency and number of sampling sites.

Other than two maximum contaminant level violations for turbidity that occurred early in January and February, 1996 monitoring results

indicated that the Project's drinking water met NYSDOH drinking water quality standards. The high turbidity was attributed to a storm event that flooded the site's water supply reservoirs and that subsequently overloaded the water treatment facility clarifier.

The Cattaraugus County Health Department conducted its annual inspection of the WVDP water supply system on November 4, 1996. No detrimental findings or notices of violation were issued.

Other 1996 site drinking water program activities included the inspection in July 1996 of the new water clarifier, which had been installed in 1995, and the construction of the new potable water storage tank in December 1996.

Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act (TSCA) of 1976 regulates the manufacture, processing, distribution, and use of chemicals, including polychlorinated biphenyls (PCBs) and asbestos-containing materials. In 1996 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 appropriate PCB waste storage on-site and any changes in storage or disposal status. In August 1996 the DOE and the EPA entered into a federal facility compliance agreement for the storage of radioactively contaminated PCB wastes. The agreement allows the WVDP to store radioactively contaminated PCB wastes for more than one year, the statutory limit for storage under TSCA. In 1996 the WVDP also continued

to manage asbestos-containing materials in accordance with the WVDP Asbestos Management Plan. The plan includes requirements for limiting worker exposure to asbestos-containing materials and requirements for asbestos-abatement projects and maintenance activities, and it identifies the inventory of on-site asbestos-containing materials.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act (NEPA) of 1969, as amended, establishes a national policy to ensure that protection of the environment is included in federal planning and decision making (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 for fulfilling these goals. The CEQ regulations for implementing NEPA are promulgated at 40 CFR Parts 1500 - 1508.

The DOE began revising its NEPA-compliance procedures and guidelines in 1990. On May 26, 1992 the President's Council on Environmental Quality approved the DOE's NEPA procedures, which are promulgated at 10 CFR Part 1021. In July 1996 the DOE amended the NEPA procedures.

NEPA requires that all federal agencies proposing actions that have 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). The DOE's NEPA procedures embody a hierarchical system of assessment for reviewing and documenting proposed actions commensurate with the action's potential for impacting the environment. Reflecting least to greatest significance,

the levels of review and documentation are: no impact and categorical exclusion; potential impact and an environmental assessment; and significant impact and an environmental impact statement. (See pp. 1 and 3 in the *Glossary*.)

Eight proposed actions at the WVDP were reviewed in 1996 under the DOE's NEPA-implementing regulations. The proposed actions included activities such as routine maintenance, removal of Class A low-level radioactive waste (LLW) for commercial disposal, replacement of the lag storage area #3 enclosure, continuation of groundwater pump-and-treat system operations, repair of the site's water reservoir emergency spillway, mixed LLW sorting and packaging, construction of a vitrification fabrication support structure, and refurbishment of shield window oil. The first four proposed actions were categorically excluded. The other four were within the scope of existing NEPA documentation and, therefore, did not require further review under NEPA.

Preparation of the draft environmental impact statement for completion of the WVDP (by the DOE) and closure or long-term management of the facilities at the WNYNSC (by NYSERDA) continued in 1996. The draft was distributed for a six-month public review period. The review period began March 22, 1996 and officially closed September 22, 1996. The public comments that were received are currently available for review in the WVDP public reading rooms. The Project's efforts are now focused on resolution of the comments received on the draft environmental impact statement. In addition, a citizen task force has been formed to assist the DOE and NYSERDA in gaining a better understanding of the public's concerns and preferences and to assist in the development of a preferred alternative. Preparation of the final environmental impact statement will begin once a preferred alternative has been identified.

Summary of Permits

The environmental permits that were in effect at the WVDP in 1996 are listed in *Appendix B*, Table B-3 (pp. B-5 through B-9).

Current Issues and Actions

Resource Conservation and Recovery Act

RCRA Facility Investigation

In 1996 the WVDP continued to identify and evaluate SWMUs to ensure compliance with the requirements of the RCRA 3008(h) Administrative Order on Consent. The two remaining draft RFI reports were submitted to both the EPA and NYSDEC. Four of the previously submitted draft reports were finalized during 1996. The current focus of the RFI program is on finalizing the remaining draft RFI reports that have been reviewed by the EPA and NYSDEC.

Clean Water Act

Groundwater Treatment

In November 1995 the WVDP installed a groundwater pump-and-treat system to mitigate the movement of strontium-90 contamination in the groundwater northeast of the process building. Two 15-foot deep recovery wells, installed near the leading edge of the groundwater plume, are designed to collect contaminated groundwater from the underlying sand and gravel unit. The treatment system uses an ion-exchange column to remove strontium-90 from the groundwater and is operated in conjunction with the LLWTF. After the groundwater is treated, it is discharged to lagoons 2, 4, or 5 at the LLWTF. Approximately 16.1 million liters (4.3 million gal) were processed through the system in 1996.

In March 1996 the WVDP submitted to NYSDEC an application for a SPDES permit modification to increase the average flow of effluent from the groundwater pump-and-treat system from approximately 9.8 million liters (2.6 million gal) a year to approximately 39.7 million liters (10.5 million gal) a year. In September 1996 a third recovery well was installed to improve groundwater capture and system performance.

In addition, the Project also evaluated other technologies in 1996 to determine if there were more effective methods for treating the groundwater. From July 1996 to December 1996, laboratory benchscale tests were conducted to determine the effectiveness of using phosphate-based materials to immobilize strontium-90 contamination in samples of soil and groundwater. (Through chemical substitution, the phosphate material bonds in place with metal ions.) The results of these tests are being evaluated.

Storm Water Discharge Permit Application

Precipitation can become contaminated with pollutants from industrial process facilities, stored industrial materials, material handling areas, access roads, or vehicle parking areas. To protect the environment, aquatic resources, and public health, Section 402(p) of the CWA requires that a storm water discharge permit application containing facility-specific information be submitted to the permitting authority. NYSDEC, the permitting authority in New York State, uses this information to ascertain the significance of releases of pollutants from storm water collection and discharge systems and to determine appropriate permitting requirements.

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 not only 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-two on-site monitoring points were identified in 1994. CWA 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 April 1996, the WVDP submitted a new SPDES discharge permit application that identified these outfalls.

Project Assessment Activities in 1996

As the primary contractor for the DOE at the WVDP, WVNS conducted more than sixty-seven reviews of environmentally related activities in 1996. These included one Project appraisal, one self-assessment, and sixty-five surveillances. In addition, five reviews were conducted by external organizations such as NYSDEC and the EPA. Overall results of the reviews reflect continuing, well-managed environmental programs at the WVDP.

Significant external environmental overview activities in 1996 included an inspection by NYSDEC for compliance with the CAA (i.e., to observe the NO_x RATA); 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 inspections did not identify any environmental program findings and further demonstrated the WVDP's commitment to protection of the environment.

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 audit. 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. The audit identified eleven findings, twenty-three observations, and four concerns. No deficiencies were found that represented conditions or actions posing a 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. In 1995 one item relating to this audit remained open. As of May 1996 all of the identified action items were resolved and closed by the DOE.

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