



Review of Regulatory Technical Requirements for Recent Changes

Environmental Compliance Summary

Calendar Year 1990

Compliance Status

Environmental compliance activities during 1990 at the West Valley Demonstration Project (WVDP) successfully addressed issues as far reaching as Resource Conservation and Recovery Act (RCRA) applications to radioactive mixed waste (wastes that are both radioactive and hazardous) management and the new Clean Air Act Amendments. Management at the WVDP continues to provide strong support for environmental compliance issues, ensuring that all state and federal statutes and regulations, as well as Department of Energy (DOE) Orders, are integrated into the compliance program at the WVDP.

The following sections provide a review of the compliance activities at the WVDP during 1990.

Clean Air Act (CAA)

The Clean Air Act establishes a comprehensive federal and state framework that regulates air emissions from both stationary and mobile sources. Under the provisions of the CAA any emission sources of a CAA-regulated substance may require a permit or be subject to registration or notification requirements. Emission sources regulated by the CAA may include stacks, ventilators, ventilation ducts, wall fans, open burning, and dust piles. During 1990 the WVDP had sixteen active air permits. (See Table B-3 in Appendix B.)

Nonradiological emissions are regulated by the New York State Department of Environmental Conservation (NYSDEC). The WVDP received approval in 1990 from NYSDEC to modify two boilers and operate four tank

vents. Of the sixteen permits, six are radiological discharges and therefore are regulated under the U. S. Environmental Protection Agency's (EPA) National Emissions Standards for Hazardous Air Pollutants (NESHAP) program.

The annual Environmental Protection Agency's NESHAP inspection in August indicated no noncompliance episodes or notices of violation. Calculations to demonstrate NESHAP compliance showed 1990 doses to be less than .01% of the revised standard of 10 millirem, which became effective in 1990.

The revised standard included a *de minimis* value for which permit applications were not required to be submitted to the EPA. The WVDP performed seven reviews on various radiological release points to determine the need for monitoring and permitting. Two future sources, both related to the vitrification process, will require further review in 1991 for NESHAP permit requirements.

Emergency Preparedness And Community Right-to-Know Act (EPCRA)

The purpose of EPCRA is to encourage and support emergency planning efforts at the state and local levels and to provide local governments and the public with information concerning potential chemical hazards in their communities.

Under EPCRA the West Valley Demonstration Project is required to supply two types of reports to various off-site state and local emergency response organizations. These reports provide information about quantities, locations, and any associated hazards of chemicals used and stored at the site. In addition, the WVDP is required to submit an annual report to the Environmental Protection Agency and

the New York State Department of Environmental Conservation on toxic chemical emissions.

All required reports were submitted to the appropriate organizations by the required deadlines. During the 1990 report period twenty-five chemicals required reporting to state and local emergency response organizations. The 1989 report was submitted as required on July 1, 1990. Annual emissions for three substances — nitric acid, sulfuric acid, and zinc compounds — were reported. The toxic chemical emissions report for 1990 is to be submitted by the July 1, 1991 file date.

Clean Water Act (CWA)

The Clean Water Act is the primary authority for water pollution control programs in the United States. It establishes a National Pollutant Discharge Elimination System (NPDES) for permitting and thus controlling discharges to groundwater and surface water. The Clean Water Act allows authorized states to issue State Pollutant Discharge Elimination System (SPDES) permits. New York State received this authorization and all WVDP point source discharges to surface waters are permitted through the SPDES program.

The WVDP has three permitted outfalls. Outfall 007 discharges the combined effluent from the site's sewage treatment plant and various industrial and potable water treatment systems. Outfall 001 discharges the effluent from the low-level radioactive waste treatment facility (LLWTF). Outfall 008 directs groundwater flow from the northeast side of the site's LLWTF lagoon system through a french drain.

Four batch discharges of treated water from the low-level waste treatment facility, of approximately 2.5 million gallons (9.5 million liters) each, occurred in 1990. The annual average concentration of radioactivity at the point of release was 28% of the DOE derived concentration guides or DCGs (see Glossary). None of the individual releases exceeded the DCGs. (See Table B-1 for a list of the Department of Energy's derived concentration guides.)

Six ammonia measurements and one biochemical oxygen demand measurement in February 1990 outside the permit limits (excursions) at outfall 007 were attributable to the site's sewage treatment plant. Immediate steps were taken to cease all effluent releases from outfall 007 and to determine the cause of the excursions. A technical review of the wastewater treatment system by qualified engineers concluded that the sewage treatment plant was undersized for the population it served. A \$1 million dollar expansion was proposed for the site's sanitary wastewater treatment system and forwarded to NYSDEC for approval, which is expected in 1991. Until the system is approved and constructed, the existing sewage treatment plant has been stabilized by using improved process control techniques.

Two other excursions occurred during the remainder of 1990. One involved a slightly elevated measurement used to determine the amount of solid material (settleable solids) discharged from the site (0.5 mg/L as compared to the permit limit of 0.3 mg/L). This excursion, which occurred at outfall 007, was investigated and concluded to be unrelated to facility operations.

The other excursion occurred at outfall 001 and involved a slightly elevated iron concentration in the effluent (0.87 mg/L as compared to a permit limit of 0.31 mg/L). The level of naturally occurring iron in the raw water used by the Project was determined to be a contributing cause. To address this problem, the WVDP began using a new water treatment chemical after receiving permission from NYSDEC. The chemical (potassium ferrate, a coagulant) has worked very well in reducing the amount of iron in the effluent. A problem with residual iron precipitates in the site's discharge basin remains to be addressed. It is possible that these sediments may become resuspended in the water column during discharge, thus causing an elevated iron value that is not due to the treatment facility's effluent. This issue is currently being investigated for appropriate action.

The New York State Department of Environmental Conservation conducted its annual SPDES inspection on February 27, 1990. Al-

though there were no notices of noncompliance issued, the Project was put on notice that it must resolve the outfall 007 excursion issue or face enforcement action. The actions taken by the Project before, during, and after the inspection were reported as noteworthy during follow-up meetings and precluded the need for enforcement action by NYSDEC.

Safe Drinking Water Act

The WVDP obtains its drinking water from on-site surface water reservoirs. The water is purified by filtration and chlorination before it is distributed to the on-site work force. As an operator of a drinking water supply system, the WVDP has monitoring and reporting requirements. The drinking water program in the State of New York is administered by the New York State Department of Health (NYSDOH) through county health departments. The WVDP is considered a nontransient, noncommunity public water supply.

Monitoring results in 1990 indicated that the Project drinking water met NYSDOH drinking water quality standards. There were no violations or audits of the drinking water program during 1990.

Resource Conservation and Recovery Act (RCRA)

The Resource Conservation and Recovery Act and ensuing amendments were enacted to ensure the environmentally sound management of solid wastes. RCRA programs are implemented by the Environmental Protection Agency unless delegated to individual states. New York has regulatory authority to administer both hazardous waste and radioactive mixed waste. Authority to regulate radioactive mixed wastes was granted to the state by the Environmental Protection Agency in May 1990.

» Radioactive Mixed Waste (RMW) Management Program

Once the EPA granted New York State authorization to regulate radioactive mixed

waste, the WVDP submitted a RCRA Part A Permit Application for on-site treatment and storage of radioactive mixed waste and thus gained RCRA Interim Status. Dual regulation of radioactive mixed waste under both the Atomic Energy Act (AEA) and RCRA occasionally results in conflicting requirements. To resolve these conflicts, the WVDP, like many other federal facilities, began discussions with the New York State Department of Environmental Conservation and the Environmental Protection Agency to negotiate a Federal and State Facilities Compliance Agreement.

Three radioactive mixed waste treatment systems were identified in the Part A permit application.

- The integrated radioactive waste treatment system (IRTS) is used to decontaminate and stabilize high-level radioactive supernatant in cement. The system, which involves treatment by ion exchange and volume reduction prior to solidification, treated 272,000 gallons of supernatant during 1990. Of this, 152,000 gallons were converted to solidified non-hazardous low-level radioactive waste.
- The vitrification system, not yet in operation, will solidify the high-level radioactive waste into glass.
- The third system will be used to treat groundwater captured from the closed Nuclear Regulatory Commission (NRC)-licensed low-level radioactive waste disposal area (NDA).

» Nonradioactive Hazardous Waste

During 1990 the WVDP used off-site, permitted transportation and disposal facilities to dispose of 2.41 tons of nonradioactive hazardous wastes. (Twenty-three tons were transported off-site for disposal in 1989). Sources of these materials ranged from expired laboratory chemicals to maintenance shop wastes. The WVDP also reclaimed, recycled, or rendered nonhazardous by neutralization 8.2 tons of material as part of its waste minimization program.

National Environmental Policy Act (NEPA)

» NEPA Phase I Activities

In February 1990 Secretary of Energy Watkins issued a secretarial directive, SEN-15-90, which modified National Environmental Policy Act compliance procedures at Department of Energy facilities. The directive rescinded NEPA decision-making authority at all Department of Energy project offices and centralized it at DOE headquarters in Washington, D.C. The directive requires "full disclosure and complete assessment" and will result in substantial revision of DOE Order 5440.1, revision and expansion of Department of Energy NEPA procedures, and the elimination of memoranda-to-file. (A memorandum-to-file is a summary of proposed actions that clearly would not have significant environmental effects).

New draft Department of Energy guidelines for complying with the National Environmental Policy Act were developed and published for public review in the Federal Register in November 1990. Comments on the draft, which were received in December 1990, indicated that extensive evaluation was required. Because of delays in review the expected final ruling will be published no sooner than October 31, 1991.

» NEPA Phase II Activities

Phase II site characterization activities in 1990 to support the environmental impact statement (EIS) for closure of the West Valley Demonstration Project were divided into twelve disciplinary areas of investigation: geology, seismology, hydrology, soils characterization, water quality, a radiological survey, a solid waste management unit assessment, air resources, socioeconomics, cultural resources, ecological resources, and pathway assessment.

Initial facility characterization in 1990 consisted of in-depth research into the operational history of the site to gain historical perspective, an overland gamma survey, and surface soil sampling at selected solid waste management units (SWMUs). In addition,

preliminary sediment samples were collected in Lagoons 2 and 3.

Field activities in 1990 included contaminant transport modeling, data collection and analysis of soil temperature and erosion measurements, and the investigation of geochemistry and water quality, groundwater flow, air quality, meteorology, and the distribution of radiological and hazardous contaminants. Demography, land use, and cultural and ecological resources were also studied.

As data was collected and interpreted, public technical information sessions about the progress and initial finds of these site characterization activities were held.

By the end of the year twelve draft environmental information packages (EIPs) had been assembled. These packages, prepared as input for an environmental impact statement contractor, eventually will be published as supporting documentation for the Phase II environmental impact statement.

Medical Waste Tracking

During the latter part of 1989 the state of New York enacted medical waste tracking, transportation, and disposal regulations. The WVDP maintains a medical services facility to provide minor health services for workers. These services include inoculations, first aid treatment, and physical examinations. The WVDP filed notification with NYSDEC that its medical activities would qualify it as a small-quantity medical waste generator (less than fifty pounds per month).

For the 1990 reporting year the WVDP transported two shipments totaling six pounds of regulated medical waste from its on-site medical facility to a licensed disposal facility. The shipments included such items as medical dressings and inoculation needles.

Petroleum Product Spill Reporting

Under an agreed-upon reporting protocol with the New York State Department of En-

vironmental Conservation, the WVDP reports spills of petroleum products that occur on-site in a monthly log, unless the spill comes in contact with environmental media, in which case NYSDEC is immediately notified. During 1990 there were thirty-one minor spills of petroleum products totaling approximately 11 gallons. These spills were typically associated with the heavy industrial equipment currently on-site as a result of increased construction activities.

Of the thirty-one spills only twelve required immediate notification of NYSDEC under the reporting protocol. The remaining nineteen were reported in the monthly log submitted to NYSDEC. All spills were cleaned up in a timely fashion in accordance with the WVDP Spill Prevention, Control and Countermeasures Plan. None of these spills entered drainage or surface waters and none resulted in any adverse environmental impact.

Current Issues and Actions

Resource Conservation and Recovery Act (RCRA)

In the summer of 1989 the U. S. Department of Justice investigated the hazardous waste management program at the WVDP. After a fifteen-month investigation the Department of Justice concluded that no criminal charges were warranted.

The WVDP has been actively engaged in negotiations with the New York State Department of Environmental Conservation and the Environmental Protection Agency to address concerns over the application of NYSDEC hazardous waste regulations to radioactive mixed waste. Eight issues initially identified for NYSDEC and the EPA were targeted for resolution through a Federal and State Facilities Compliance Agreement (FSFCA). Through discussions between technical experts from the WVDP, NYSDEC, and the EPA, tentative resolution of seven of these issues was obtained outside the FSFCA framework through mutually acceptable letters of understanding. Finalization of all agreements is targeted for 1991 and will con-

firm the desire of all parties to see that the WVDP's goal of solidification and stabilization of the high-level radioactive waste continues in an environmentally acceptable fashion.

Concurrent with discussions on the Federal and State Facilities Compliance Agreement, the WVDP has been actively engaged in discussions with NYSDEC and EPA concerning a RCRA 3008(h) Consent Order for potential corrective actions. The Consent Order will confirm the WVDP's intent to fully characterize and ultimately close those facilities associated with the stabilization and solidification of the high-level radioactive waste. Discussions and signing of the Order are targeted for completion in 1991.

Hazardous Materials Transportation

On July 10, 1990 three containers of a non-radioactive, unused, hazardous chemical (zirconyl nitrate) failed enroute while being returned to the manufacturer by the WVDP. The contents of the containers (approximately 165 gallons) leaked from the truck carrying the chemical onto the surface of a roadside highway rest stop.

Initial response by local emergency response organizations quickly neutralized the material, precluding any potential public health or environmental effect. Under the supervision of WVDP personnel the area was cleaned and returned to general access. All cleanup material was properly disposed of as industrial waste through licensed disposers. Subsequent investigations by the WVDP and the U.S. Department of Transportation (DOT) indicated that the container failures were attributable to the use of incompatible containers when the chemical was repackaged for return to the manufacturers.

The Department of Transportation incident review initially concluded that two deviations from DOT regulatory requirements had occurred. After discussions with the WVDP investigation team and consultation with DOT officials in Washington, one of the findings was rescinded. After considering actions taken by WVDP personnel in response to the incident,

the monetary penalty associated with the second finding was reduced from \$10,000 to \$4,000.

Clean Water Act (CWA)

The WVDP undertook two major reviews of its wastewater treatment systems during 1990. Both reviews were designed to address and resolve permit excursions at permitted outfalls 001 and 007. Implementation of the recommendations from these reviews is awaiting NYSDEC review and/or approval.

An engineered interceptor trench and an accompanying liquid pretreatment system downgradient of the NRC-licensed disposal area (NDA) was completed in December 1990. The trench will prevent the migration of potentially contaminated groundwater from the disposal area. This contamination had been detected earlier in groundwater monitoring wells in the NDA. The pre-treated liquids will be further treated in the WVDP low-level waste treatment facility and released via a SPDES-permitted discharge point. As of April 1991 no contaminated groundwater had been detected in the trench system. A modification to the site's SPDES permit to accommodate this waste stream was applied for and approved in 1990.

Tiger Team Assessment

The July 1989 Tiger Team review of the WVDP identified 122 findings/concerns (twelve from the Management Assessment, fifty from the Environmental Assessment, and sixty from the Technical Safety Appraisal) that required 389 specific-action-item responses. As of December 1990 the DOE West Valley Project Office had concurred on closure of 105 of the findings. The Tiger Team Assessment report is available at the WVDP for public review.

Summary of Permits

Environmental permits in effect at the West Valley Demonstration Project during 1990 are listed in Table B-3 of Appendix B. In 1990 the Project received approval to modify its SPDES permit to accommodate wastewaters from the NDA interceptor trench project, submitted an application to renew the SPDES permit (which includes a modification to the site's sewage treatment plant), received a depredation permit to remove barn swallow nests, received approval to modify two air discharge sources, received approval to operate four tank vents, and submitted a RCRA Part A permit application.

Environmental Compliance Summary

First Quarter 1991

Compliance Status

The compliance status of the West Valley Demonstration Project's (WVDP) major environmental programs through the first quarter of 1991 is presented below. The Department of Energy's Idaho Operations Office surveilled the West Valley Demonstration Project's environmental compliance programs and found no environmental, safety, or health deficiencies.

Clean Air Act (CAA)

The New York State Department of Environmental Conservation (NYSDEC) inspected the WVDP's air programs in January 1991 to verify that the permit application for a chemistry laboratory was an accurate representation of the as-built condition. The inspection did not result in any findings and the Certificate to Operate was issued. Certificates to Operate were also received for a paint booth and a source capture welding system.

A package containing information on the vitrification off-gas treatment system was submitted to the U. S. Environmental Protection Agency (EPA) for review. This information will be used to develop a National Emissions Standards for Hazardous Air Pollutants (NESHAP) permit application, to be approved by the EPA, before the system begins to operate.

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

Emergency and Hazardous Chemical Inventory (Tier II) Reports were transmitted to the state and local emergency response organizations by the March 1, 1991 deadline.

A site-wide computer chemical-tracking system that facilitates the reporting process under EPCRA was put into operation.

Clean Water Act (CWA)

The WVDP submitted a proposed sampling and analysis strategy to the New York State Department of Environmental Conservation on March 20, 1991 for gathering data to support the upcoming storm water permit application requirements. Information obtained from NYSDEC and the EPA indicates that agency administration of this program is still uncertain and further guidance may be forthcoming.

Resource Conservation and Recovery Act (RCRA)

The WVDP's hazardous waste and radioactive mixed waste programs were inspected by the New York State Department of Environmental Conservation on March 20 and March 22, 1991. There were no findings or notices of noncompliance. In addition, the outstanding items from a 1989 inspection were closed.

The Annual Hazardous Waste Generator/Waste Minimization Report was submitted to the New York State Department of Environmental Conservation by the March 1, 1991 deadline.

Medical Waste Tracking

A medical waste disposal agreement was signed by the WVDP and a local licensed medical facility on February 12, 1991. The agreement provides for the proper packaging and transport of WVDP medical waste to the medical facility and its subsequent disposal by that facility.

Petroleum Product Spill Reporting

A revised Petroleum Product Spill Reporting Protocol was agreed to by the West Valley Demonstration Project and the New York State Department of Environmental Conservation. The revised protocol expanded the category of nonenvironmental-impact spills that could be recorded in the monthly spill log.

Safe Drinking Water Act

Under new Environmental Protection Agency primary drinking water standards the WVDP will be reviewing the effectiveness of its drinking water treatment system. New performance standards for the removal of certain microorganisms have been issued that require verification that the standards can be met before they become effective.

National Environmental Policy Act (NEPA)

A categorical exclusion is a category of action that normally does not individually or cumulatively have a significant effect on the quality of the human environment and that requires neither an environmental impact statement nor an environmental assessment. Eleven categorical exclusion determinations and one environmental assessment (EA) were prepared and submitted for Department of Energy approval in the first quarter of 1991.

Current Issues and Actions

Resource Conservation and Recovery Act (RCRA)

Based on the conclusion of the U. S Department of Justice investigation of the West Valley Demonstration Project, which ended in September of 1990 and resulted in no criminal charges, and on discussions with WVDP technical personnel, the New York State Department of Environmental Conservation did not feel any further action was necessary relating to the 1989 hazardous waste program investigation. A March 1991 NYSDEC inspection of the WVDP's hazardous and radioactive

mixed waste management programs resulted in no findings and effectively closed all outstanding issues of NYSDEC's 1989 audit.

Tiger Team Assessment

The 1989 Tiger Team Action Plan response for the WVDP was fully completed, including Project Office concurrence, as of mid-February 1991. The Tiger Team Assessment report is available at the WVDP for public review.

Summary of Permits

Since January 1991 air permit applications for a source capture welding system, a paint booth, and Analytical and Process Chemistry Laboratory equipment were approved by the New York State Department of Environmental Conservation.

In March 1990 a restricted burning permit application required to conduct fire brigade training was submitted to NYSDEC.

A depredation permit for the removal of abandoned barn swallow nests was renewed by the U.S. Fish and Wildlife Service and NYSDEC.

As suggested by NYSDEC, the WVDP prepared an amendment to its RCRA Part A permit application. The amendment expands storage capacity to accommodate an additional facility for the storage of nonradioactive, hazardous wastes.