

Appendix B

Environmental Regulations, Orders, Standards, and Permits

Table B - 1

**Department of Energy Radiation Protection Standards
and Derived Concentration Guides***

Effective Dose Equivalent Radiation Standard for Protection of the Public

**Continuous exposure of any member of the public from routine activities:
100 mrem/year (1 mSv/yr) effective dose equivalent from all exposure pathways**

**Department of Energy Derived Concentration Guides (DCGs) for
Drinking Water and Air ($\mu\text{Ci/mL}$)**

<i>Radionuclide</i>	<i>Half-Life (years)</i>	<i>In Air</i>	<i>In Water</i>	<i>Radionuclide</i>	<i>Half-Life (years)</i>	<i>In Air</i>	<i>In Water</i>
H-3**	1.2E+01	1E-07	2E-03	Eu-152	1.4E+01	5E-11	2E-05
C-14**	5.7E+03	6E-09	7E-05	Eu-154**	8.8E+00	5E-11	2E-05
Fe-55	2.7E+00	5E-09	2E-04	Eu-155	5.0E+00	3E-10	1E-04
Ni-59	7.5E+04	4E-09	7E-04	Th-232	1.4E+10	7E-15	5E-08
Co-60**	5.3E+00	8E-11	5E-06	U-232**	7.2E+01	2E-14	1E-07
Ni-63	1.0E+02	2E-09	3E-04	U-233**	1.6E+05	9E-14	5E-07
Sr-90**	2.9E+01	9E-12	1E-06	U-234**	2.4E+05	9E-14	5E-07
Y-90	7.3E-03	1E-09	1E-05	U-235**	7.0E+08	1E-13	6E-07
Zr-93	1.5E+06	4E-11	9E-05	U-236**	3.4E+06	1E-13	5E-07
Nb-93m	1.5E+01	4E-10	3E-04	U-238**	4.5E+09	1E-13	6E-07
Tc-99**	2.1E+05	2E-09	1E-04	Np-239	6.5E-03	5E-09	5E-05
Ru-106	1.0E+00	3E-11	6E-06	Pu-238**	8.8E+01	3E-14	4E-08
Cd-113m	1.4E+01	8E-12	9E-07	Pu-239**	2.4E+04	2E-14	3E-08
Sb-125	2.8E+00	1E-09	5E-05	Pu-240**	6.5E+03	2E-14	3E-08
Te-125m	1.6E-01	2E-09	4E-05	Pu-241	1.4E+01	1E-12	2E-06
Sn-126	1.0E+05	1E-10	8E-06	Am-241**	4.3E+02	2E-14	3E-08
I-129**	1.6E+07	7E-11	5E-07	Am-242m	1.5E+02	2E-14	3E-08
Cs-134**	2.1E+00	2E-10	2E-06	Am-243	7.4E+03	2E-14	3E-08
Cs-135	2.3E+06	3E-09	2E-05	Cm-243	2.8E+01	3E-14	5E-08
Cs-137**	3.0E+01	4E-10	3E-06	Cm-244	1.8E+01	4E-14	6E-08
Pm-147	2.6E+00	3E-10	1E-04	Gross Alpha (as Am-241)	N/A	2E-14	3E-08
Sm-151	9.0E+01	4E-10	4E-04	Gross Beta (as Sr-90)	N/A	9E-12	1E-06

* Ref: DOE Order 5400.5 (February 8, 1990). Effective May 8, 1990.

** Analysis for these radionuclides in WVDP effluent are performed routinely.

N/A = Not applicable.

Table B - 2

Environmental Regulations, Orders, and Standards

The following environmental standards and laws are applicable, in whole or in part, to the West Valley Demonstration Project:

DOE Order 5400.1. November 9, 1988. *General Environmental Protection Program*, including Change 1 (June 29, 1990).

DOE Order 5480.1B. September 23, 1986. *Environment, Safety, and Health Program for DOE Operations*, including Change 5 (May 10, 1993).

DOE Order 5484.1. February 24, 1981. *Environmental Protection, Safety, and Health Protection Information Reporting Requirements*, including Change 7 (October 17, 1990).

Clean Air Act (CAA). 42 USC 1857 et seq., as amended, and implementing regulations.

Federal Water Pollution Control Act [Clean Water Act (CWS)]. 33 USC 1251, as amended, and implementing regulations.

Resource Conservation and Recovery Act (RCRA). 42 USC 6905, as amended, and implementing regulations.

National Environmental Policy Act (NEPA). PL 911-190. 42 USC 4321-4347, January 1, 1970, as amended, and implementing regulations.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). 42 USC 960 (including Superfund Amendments and Reauthorization Act of 1986), and implementing regulations.

Toxic Substances Control Act (TSCA). 15 USC 2610, as amended, and implementing regulations.

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986, Title 3, 40 CFR Parts 302, 350, 355, 370, and 372.

Safe Drinking Water Act (SDWA). 40 CFR Part 141-149, as amended, and implementing regulations.

Environmental Conservation Law of New York State.

The standards and guidelines applicable to releases of radionuclides from the West Valley Demonstration Project are found in DOE Order 5400.5 (February 8, 1990), including Change 2 (January 7, 1993).

Ambient water quality standards contained in the State Pollutant Discharge Elimination System (SPDES) permit issued for the facility are listed in Table C-5.1. Airborne discharges are also regulated by the Environmental Protection Agency under the National Emissions Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR 61 Subpart H (December 15, 1989).

The above list covers the major activities at the West Valley Demonstration Project but does not constitute a comprehensive enumeration.

Table B-3

West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Type	Description	Status
Boilers (042200-0114-00002 and 042200-0114-00003)	NYSDEC/Certificate to Operate an Air Emission Source (CO)	Boilers located in the utility room	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Cement storage silo ventilation system (042200-0114-CSS01)	NYSDEC/CO	Exhaust from the cement storage silo baghouse	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Analytical & Process Chemistry Laboratory (042200-0114-15F-1)	NYSDEC/CO	Analytical & Process Chemistry Laboratory equipment from various laboratories in the main plant	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Tank #35157 vent (042200-0114-35157)	NYSDEC/CO	Vent from 3,000-gallon sulfuric acid tank #35157	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Source-capture welding system (042200-0114-MS001)	NYSDEC/CO	Maintenance shop welding ventilation using "elephant trunk" ducts to vent welding fumes at the source of generation	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Blueprint machine (042200-0114-00012)	NYSDEC/CO	Blueprint machine vent for ammonia emissions	Renewal request was reviewed by NYSDEC and WVNS on 9/8/94. A new CO is forthcoming.
Blower exhausts, welding only (042200-0114-00013) Welding/painting (042200-0114-00014) Painting only (042200-0114-00015)	NYSDEC/CO (three permits)	Portable blowers (some with and some without filters) for venting emissions from typical painting and welding operations in the vitrification facility	COs expire in 1998/1999. NYSDEC has agreed to allow expanded use of these COs to allow the WVDP to use these blowers for similar painting and welding operations anywhere on- site.
Analytical cell mock-up unit (042200-0114-00027)	NYSDEC/CO	Analytical cell mock-up unit (located in the vitrification test facility) emissions from use of laboratory chemicals	CO expires 12/1/98.
SVS solids transfer system (042200-0114-SVS01), SVS vessel vent system (042200-0114-SVS02), and SVS mini-melter off-gas system (042200-0114-SVS04)	NYSDEC/CO (three permits)	Scale vitrification system vac-u- max solids transfer system vent, feed mix tank vent, and melter off-gas treatment system emissions.	COs issued 9/8/94 for one year (expiration 8/1/95). NYSDEC will reinspect upon test run start-up and will extend until 8/1/99.

Table B-3 (continued)

West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Type	Description	Status
SVS ammonia vent system (04220-0114-SVS07)	NYSDEC/CO	Scale vitrification system ammonia vent system for relieving pressure before cylinder change-outs	NYSDEC issued CO on 10/11/94. Expires 8/1/99.
Environmental Analytical Annex laboratory hoods (042200-0114-00016 through 042200-0114-00026)	NYSDEC/CO (eleven permits)	Eleven separate blowers for laboratory hoods and analytical equipment in the Environmental Analytical Annex (EAA) [i.e., vitrification cold operations laboratory]	COs issued 8/11/94. Expire 8/1/99.
LLWTF nitric acid storage tank (042200-0114-00010)	NYSDEC/CO	Low-level waste treatment facility nitric acid storage tank #33013	NYSDEC acknowledged termination of CO on 9/19/94.
Tank #33154 vent (042200-0114-33154)	NYSDEC/CO	3,200-gallon nitric acid tank #33154	NYSDEC acknowledged termination of CO on 9/19/94.
Tanks #14D-2 and 14D-2A (042200-0114-14D-2 and 042200-0114-14D-2A)	NYSDEC/CO (two permits)	Sodium hydroxide tanks 14D-2 and 14D-2A	NYSDEC acknowledged termination of CO on 9/19/94.
Nitric acid tank vent (042200-0114-MDB07)	NYSDEC/CO	250-gallon nitric acid tank used in the melter disassembly building	NYSDEC acknowledged termination of CO on 9/19/94.
Cold chemical solids transfer system (042200-0114-CTS02) Cold chemical vessel vent system (042200-0114-CTS03) Cold chemical vessel dust collection hood (042200-0114-CTS04)	NYSDEC/Permits to Construct an Air Emission source (PC) (three permits)	Cold chemical facility. Dry or solid chemical emissions from solids transfer system, dust collection hood, and from mix tank vent for vitrification operations	PC extended until 12/31/95. Will convert to COs as soon as construction is completed.
Vitrification off-gas treatment system (042200-0114-15F-1)	NYSDEC/PC	Vitrification facility off-gas treatment system emissions	PC expires on 7/31/95. Will be converted to a CO when construction and turnover are completed.
Vitrification facility HVAC system (042200-0114-15F-2)	NYSDEC/PC	Canister welding emissions vented through vitrification facility HVAC system. [i.e., canister welding ventilation]	PC extended until 12/31/95. Will convert to COs as soon as construction is completed.

Table B-3 (continued)

West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Type	Description	Status
Vitrification melter off-gas system	EPA/Applied for NESHAPs permit	Slurry-fed ceramic melter radionuclides emissions	Submitted 9/93. Required by 1/96. EPA has reviewed and indicated that the permit should be issued in 1995. Awaiting response.
Vitrification HVAC system	EPA/Applied for NESHAPs permit	Vitrification facility HVAC - system radionuclide emissions	Submitted 9/93. Required by 1/96. EPA has reviewed and indicated that the permit should be issued in 1995. Awaiting response.
01-14 building ventilation system (WVDP-187-01)	EPA/NESHAPs	Liquid waste treatment system ventilation of radionuclides in the 01-14 building	Issued 10/5/87. Modified 5/25/89. No expiration date.
Contact size-reduction facility (WVDP-287-01)	EPA/NESHAPs	Contact size-reduction and decontamination facility radionuclide emissions	Issued 10/5/87. No expiration date.
Supernatant treatment system (WVDP-387-01)	EPA/NESHAPs	Supernatant treatment system ventilation for radionuclide emissions	Issued 10/5/87. No expiration date.
Low-level waste supercompactor (WVDP-487-01)	EPA/NESHAPs	Low-level waste supercompactor ventilation system for radionuclide emissions	Issued 10/5/87. No expiration date.
Outdoor ventilated enclosures (WVDP-587-01)	EPA/NESHAPs	Ten portable ventilation units for removal of radionuclides	Issued 12/22/87. No expiration date.
Process building ventilation system (WVDP-687-01)	EPA/NESHAPs	Original main plant ventilation of radionuclides	Issued 12/22/87. No expiration date.
RCRA Part A	NYSDEC/Hazardous waste	Waste management for WVDP - process HLW; container storage of mixed waste; identifies waste streams and RCRA limits	Currently operating under interim status.
SPDES NY0000973	NYSDEC/Water discharge	Covers discharges to surface waters from various sources on-site	Expires 2/1/99. Construction of a flow augmentation solids system is scheduled for completion by 9/1/95.
Chemical bulk storage registration	NYSDEC/Registration	Registration of bulk storage tanks used for listed hazardous chemicals	Expires 7/95. Will be renewed before expiration.

Table B-3 (concluded)

West Valley Demonstration Project Environmental Permits

Permit Name and Number	Agency/Type	Description	Status
Petroleum bulk storage registration	NYSDEC/Registration	Registration of bulk storage tanks used for petroleum	Expires 9/96. Will be renewed before expiration.
Federal depredation permit (PRT-747595) New York State depredation license (DWP94-053)	U.S. Fish & Wildlife Service/New York State Division of Fish & Wildlife Depredation Permit/License	Permit/license for the removal of nests of migratory birds	Annual permit/license. Expires 5/2/95. Will be renewed before expiration.