**UNITED STATES
DEPARTMENT OF ENERGY
NEVADA OPERATIONS OFFICE**

ENVIRONMENTAL COMPLIANCE HANDBOOK

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THIRD EDITION

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MASTER

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GUIDE TO ACRONYMS AND INITIALS

ACHP	Advisory Council on Historic Preservation. This council comments on potential impacts to historic sites.
BAT	Best Available Technology economically achievable. Preferred technology for treating a particular process liquid waste, selected after considering technology, economics, public policy, and other factors.
BCT	Best Conventional Technology. Technology used to control "conventional" pollutants (i.e., suspended solids, fecal coliform bacteria, BOD, and pH).
BLM	Bureau of Land Management. The Branch of the U.S. Department of the Interior that oversees the use of most federal lands.
BMP	Best Management Practices. Management practices designed to reduce emissions of pollutants. These are often described in any permits that have been issued.
BPCT	Best Practicable Control Technology. The average of the best performance of successfully operated plants of a particular type.
BTU	British Thermal Units.
CAA	Clean Air Act. The result of at least 10 acts of Congress and over 35 years of legislation, this act governs the emissions of air pollutants and the protection of ambient air quality.
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980. Governs the clean-up of hazardous substances at pre-existing waste disposal sites.
CEQ	Council on Environmental Quality. Established under NEPA to advise and report to the President on the quality of the environment.
CFR	Code of Federal Regulations.
CWA	Clean Water Act. Popular name of the body of law comprising the Federal Water Pollution Control Act Amendments of 1972, the Clean Water Act of 1977, and the Water Quality Act of 1987. Later revised in 1988 and 1990.
CX	Categorical Exclusion. A codified class of action requiring neither an environmental assessment nor an environmental impact statement.
DEISH	Division of Enforcement for Industrial Safety and Health (Nevada).
DMR	Discharge Monitoring Report. This is a regularly produced summary of the records of a permitted discharge, used to document compliance with the Clean Water Act.
DOE	U.S. Department of Energy.
DOE/NV	Department of Energy, Nevada Operations Office.

DOI	U.S. Department of the Interior.
DOT	U.S. Department of Transportation.
EA	Environmental Assessment. A NEPA document prepared to determine if an EIS is required before an operation can commence.
EIS	Environmental Impact Statement. A written NEPA document that provides a full and fair discussion of the potential significant environmental impacts of a planned project, program or activity as defined in 40 CFR 1502.
EO	Executive Order. Directive issued by the President of the United States of America.
EPA	U.S. Environmental Protection Agency. The executive agency charged with protecting the environment of the United States.
EPCRA	Emergency Planning and Community Right-to-know Act (SARA Title III).
ESHD	Environment, Safety & Health Division of AMESSH.
ESA	Endangered Species Act of 1973. Lists endangered and threatened species and provides for protection of their members and habitat.
FDA	U.S. Food and Drug Administration.
F/FW	State Forester Firewarden.
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended (1954, 1959, 1964, 1972, 1975, 1978, and 1988). Governs the storage, use, and disposal of pesticides.
FLPMA	Federal Land Policy and Management Act of 1976. This act governs the use of federal lands, which may be overseen by several agencies.
FONSI	Finding of No Significant Impact. A NEPA document declaring a finding of no significant environmental impact based on the results of an environmental assessment, as defined in 40 CFR 1508.13.
FR	Federal Register.
FWS	U.S. Fish and Wildlife Service.
HMTA	Hazardous Materials Transportation Act of 1975. Governs the transport of hazardous materials on public roads.
HSWA	Hazardous and Solid Waste Amendments Act of 1984. The November 8, 1984 amendments to the RCRA.
LDR	Land Disposal Restrictions.
LEPC	Local Emergency Planning Committee. This city or county committee is in charge of planning responses to emergency situations.

MCL	Maximum Contaminant Level.
MSDS	Material Safety Data Sheet. Documents prepared by the manufacturer, providing important safety information for chemicals they manufacture.
NAC	Nevada Administrative Code. The official codification of state regulations.
NASA	National Aeronautics and Space Administration.
NDEP	Nevada Division of Environmental Protection (under NDCNR). Responsible for the enforcement of environmental regulations within the state of Nevada.
NDOW	Nevada Department of Wildlife. Administers and enforces the Nevada state wildlife statutes and regulations.
NDCNR	Nevada Department of Conservation and Natural Resources.
NEPA	National Environmental Policy Act of 1969. This act established requirements for environmental impact assessments by federal agencies prior to implementing new programs or constructing new facilities. It is the basic national charter for protection of the environment.
NESHAP	National Emission Standards for Hazardous Air Pollutants. These are Clean Air Act limits of pollutants such as radioactive materials and asbestos that may be emitted into the atmosphere.
NHPA	National Historic Preservation Act of 1966. This act protects all sites of historic importance.
NPDES	National Pollutant Discharge Elimination System. This is the EPA program for permitting waste water discharges to surface waters under the Clean Water Act.
NPL	National Priorities List. This is an EPA nationwide listing of sites that have the highest priority for remedial action under CERCLA.
NPS	National Park Service.
NRC	National Response Center.
NRS	Nevada Revised Statutes. These codes contain state laws.
NSPS	New Source Performance Standard. These EPA-promulgated standards impose technology-based emission or discharge limitations on new pollution sources under the Clean Air Act.
NTS	Nevada Test Site.
OSHA	Occupational Safety and Health Act of 1970. Governs the protection of workers.
PCBs	Polychlorinated Biphenyls. A class of hazardous substance regulated under TSCA.
ppm	Parts per million.
Pub. L.	Public Law. This is also shown as PL.

POPS	Performance-Oriented Packaging Standards. Replaced previous Department of Transportation regulations which were based on industry packaging standards.
POTW	Publicly Owned Treatment Works. Wastewater treatment facilities owned by cities, counties, etc.
PSD	Prevention of Significant Deterioration. This aspect of the Clean Air Act seeks to minimize the deterioration of air quality at locations where air quality is already cleaner than the ambient air standards.
RCRA	Resource Conservation and Recovery Act of 1976. Governs the generation and treatment, storage and disposal of hazardous wastes.
ROD	Record of Decision. A concise public record of the decision reached by an agency in cases requiring environmental impact statements. Also the record of decision reached by the EPA or lead agency in a CERCLA remedial action.
ROW	Right-of-Way. Strip of land used by a government entity as a conduit for transport or transmission, or the legal permission to use such a conduit, as authorized by the Federal Land Policy and Management Act.
RQ	Reportable Quantity. Quantity of a hazardous substance released to the environment that requires reporting to the National Resource Center and other agencies under CERCLA/SARA.
SAE	Society of Automotive Engineers.
SARA	Superfund Amendments and Reauthorization Act of 1986. Amended and reauthorized the CERCLA legislation. (Title III of SARA is also known as the Emergency Planning and Community Right-to-Know Act of 1986.)
SDWA	Safe Drinking Water Act of 1974. Protects public drinking water supplies through promulgation of drinking water standards.
SERC	State Emergency Response Committee. Responsible for planning and coordinating state emergency response to releases of hazardous substances into the environment.
SHO	State Health Officer. Nevada official within the Division of Health, Nevada Department of Human Resources.
SHPO	(Nevada) State Historic Preservation Officer, Administrator of the Division of Historic Preservation and Archaeology, Nevada Department of Conservation and Natural Resources, appointed by the Governor.
TSCA	Toxic Substances Control Act of 1976. Regulates the production, transport, use, and disposal of toxic substances.
TSD	Treatment, Storage and Disposal. Refers to facilities engaged in the treatment, storage, or disposal of RCRA-regulated hazardous wastes.
UIC	Underground Injection Control. Regulations governing the injection of waste materials into wells as a means of disposal.
U.N.	United Nations

U.S.C.	United States Code. A set of volumes that contains the codification of all federal laws.
USFWS	U.S. Fish and Wildlife Service. Under the U.S. Department of the Interior, the USFWS is responsible for the management and conservation of wildlife in the United States.
USGS	U.S. Geological Survey.
UST	Underground Storage Tank. If at least 10% of a storage tank or its associated pipes are buried, it is considered to be an underground storage tank.
VOC	Volatile Organic Compound

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1 INTRODUCTION

The Environment, Safety & Health Division (ESHD) of the Nevada Operations Office has prepared this Environmental Compliance Handbook for all users of the Nevada Test Site (NTS) and other U. S. Department of Energy, Nevada Operations Office (DOE/NV) facilities. The Handbook gives an overview of the important environmental laws and regulations that apply to activities conducted by the Nevada Operations Office and other users of DOE/NV facilities in Nevada.

Facility users who are not DOE/NV employees, DOE/NV contractors, or employees of national laboratories and who are not working on DOE/NV projects will not be covered by the permits granted to the DOE/NV by the state of Nevada or the agreements made by the DOE/NV with the state of Nevada. Private companies, corporations, and other entities granted access and use of the Nevada Test Site or other DOE/NV facilities through the Nevada Test Site Development Corporation or through other means must secure their own environmental, safety, and health licenses and permits and are responsible for compliance with all applicable environmental laws and regulations. The DOE/NV ESHD will assist such users by identifying the appropriate state points of contact and answering questions regarding the processes for permit application and the requirements for reporting. Although the DOE assumes no oversight responsibility for the environmental compliance of the NTS Development Corporation or other NTS permittees, it reserves the right to review and approve a permittee's health and safety plan.

The Handbook now consists of ten chapters including this Introduction. The National Environmental Policy Act (NEPA) was given its own chapter, Chapter 2, under the title, **Environmental Review**. Chapters 3 and 4 are devoted to **Cultural Resource Management** and **Natural Resource Management**, respectively. Chapters 5 and 6 cover **Air and Water Pollution Control**. The largest segment, Chapter 7, presents the many facets of **Solid Waste and Hazardous Materials Management**. Laws related to **Health and Safety** were placed in Chapter 8. Users of the Handbook will find the Safe Drinking Water Act (SDWA) presented in Chapter 8 rather than with the Clean Water Act in Chapter 6, because the SDWA has more to do with

health, by means of its monitoring programs, than with pollution control. Chapter 9 presents the laws and regulations of **Land Use Management**. Protection of wetlands and floodplains are included under land management rather than under water pollution control. Finally, Chapter 10 presents the laws and regulations for **Management of Radioactive Materials and Radioactive Wastes**.

In general, each chapter begins with a **Regulatory Summary** which highlights the provisions of the federal and, where applicable, state, interstate, and local laws. Second, is a statement of **Applicability**. Most of the laws are applicable, more or less, to all users of the facilities. Third, is a discussion of the **Process for Compliance**. This section typically describes the need for permits and highlights the requirements of the implementing regulations. Fourth, in most chapters, is a discussion of the **Information and Reporting Requirements**. Next, is a statement identifying the **DOE/NV Contacts**, persons to call when additional information is needed. In every case, the principal contact is the Director, Environment, Safety & Health Division, but some chapters list other contacts as well. See List of Contacts in Appendix A. The last heading lists the **References** used to prepare the chapter and to direct the reader to the proper sources of regulatory information. Other headings are used where needed to clarify the presentation. These extra headings are especially necessary in Chapter 7.

The Environment, Safety & Health Division welcomes comments on the contents and presentation of information in this Handbook. Users who are responsible for compliance may wish to see more (or less) space devoted to certain laws. The Handbook could be useful in employee training programs if the presentations are deemed suitable.

Users of the Handbook are cautioned not to rely solely on this overview for regulatory requirements. It only summarizes the highlights, and regulations are continually revised. Use the reference lists at the end of each chapter to find the regulations that pertain to the law and the activity in question. See Nevada Test Site Permit Status List in Appendix B. Feel free to call the Environment, Safety & Health Division at (702) 295-1433 for additional guidance.

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2 ENVIRONMENTAL REVIEW

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969

REGULATORY SUMMARY

The National Environmental Policy Act is intended to ensure that federal agencies and departments consider potential environmental impacts before making decisions or taking significant actions; and, that they document these considerations and actions. NEPA established the Council on Environmental Quality (CEQ), which is responsible for the development of national environmental policy. CEQ's NEPA regulations (40 CFR 1500-1508) contain a series of "action-forcing" provisions to ensure that agency decision makers consider the consequences of their actions and consider alternatives to proposed actions that may lessen the environmental impact. The failure of a federal agency to follow the procedures of NEPA provides grounds for judicial review.

Federal agencies are required to promulgate rules to implement the provisions of NEPA. The DOE's NEPA Implementing Procedures are codified in 10 CFR 1021. For proposed actions which may have significant environmental impacts, the regulations specify that either an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) be prepared to determine the environmental consequences of the proposed action and alternatives, including a no-action alternative. The EIS is based upon detailed analyses of impacts and leads to a Record of Decision (ROD) on the alternative chosen, while the EA is a screening document used to determine whether or not an EIS is required. If an EA indicates that the environmental consequences are not significant, a Finding of No Significant Impact (FONSI) is prepared.

Appendices A through D of Subpart D of 10 CFR 1021 lists the Typical Classes of Actions which 1) normally do not require either an EA or an EIS (Appendices A and B), 2) normally require an EA but not necessarily an EIS (Appendix C), and 3) normally require an EIS (Appendix D). Classes of Actions that do not need an EA or an EIS are Categorically Excluded (CX).

APPLICABILITY

The requirements of NEPA to analyze impacts are applicable to all activities that could affect the environment undertaken by, on behalf of, or with the permission of the U.S. Department of Energy, Nevada Operations Office.

Federal agencies must comply with NEPA for all activities, but waivers may be granted for those activities involving classified work in the interest of national defense or foreign policy. In these cases, the federal agency involved may still be required to prepare an EA or an EIS, but it may limit the dissemination of the classified information to properly cleared personnel.

PROCESS FOR COMPLIANCE

Part 1501 of the CEQ regulations requires integration of the NEPA process into project planning as early as possible. The DOE's NEPA Implementing Procedures (10 CFR 1021) adopt the CEQ regulations and provide agency implementing procedures as required by NEPA. Further agency-wide guidance is documented in DOE Order 451.1, and procedures unique to the Nevada Operations Office are provided in the DOE/NV's Volume III of the NEPA Compliance Guide.

In general, DOE/NV contractors and Nevada Test Site users, including corporate tenants, are required to review all proposed projects within their organization and to consult with the Environmental Protection Division to determine overall environmental compliance requirements.

The Environmental Protection Division has developed a NEPA Environmental Evaluation Checklist that is used to make NEPA determinations and recommendations. The DOE/NV Project Manager is responsible to complete the checklist but may use contractors and corporate tenant representatives to provide the information. The Project Manager forwards the checklist, along with the project description, to the DOE/NV NEPA Compliance Officer for a determination. The DOE/NV NEPA Compliance Officer reviews all checklists and project descriptions. For proposed actions that fit within a class of actions that may be categorically excluded, the DOE/NV

NEPA Compliance Officer may determine that no further documentation is required for purposes of NEPA. For proposed actions that are listed in Appendices C or D or that are not listed in any of the Typical Classes of Action, the NEPA Compliance Officer recommends the level of NEPA review necessary (either an EA or EIS) and the DOE/NV Manager makes the determination.

Certain proposed actions may be adequately covered by the 1996 *Environmental Impact Statement for the Nevada Test Site and Other Off-site Locations in Nevada* and will not require further NEPA review. In such cases, the NEPA Compliance Officer will sign the Environmental Evaluation Checklist and mark it "covered by the EIS."

Proposed actions not categorically excluded or covered by the 1996 NTS EIS would require preparation of either an EA or EIS. An EA is prepared to determine if an EIS is necessary. However, it is not required to prepare an EA before beginning preparation of an EIS. If it is clear that an EIS would be necessary or it is determined that it would be advantageous to DOE/NV to prepare an EIS for a particular proposed action, the Agency may begin directly to prepare an EIS. The DOE/NV NEPA Program and DOE NEPA regulations identify the minimum public involvement requirements for an EA. Those minimum requirements include internal coordination and review of the pre-approval draft EA by the host state and potentially affected American Indian tribes or groups.

If, based on information presented in the EA, it is decided that the environmental impacts of a project would not be significant, the Environmental Protection Division prepares and publishes a FONSI signed by the DOE/NV Manager. If an EA indicates that significant environmental impacts are unavoidable, an EIS is necessary.

An EIS is a detailed document prepared in accordance with the CEQ NEPA regulations and in consultation with other interested federal or state agencies. The EIS process always involves opportunistic extensive public participation. The EIS must be completed and a ROD published before implementation of the proposal being considered.

The various steps outlined above are explained further, and examples given in the NEPA Compliance Guide, Volume III. Responsibilities are documented in DOE Order 451.1a.

DOE/NV CONTACTS

The principal point of contact is the NEPA Compliance Officer, Environmental Protection Division, at (702) 295-1759.

REFERENCES

National Environmental Policy Act of 1969, as amended, 42 U.S.C. 4321-4347.

40 CFR 1500-1508, CEQ Regulations.

10 CFR 1021, DOE NEPA Implementing Procedures.

Exec. Order 11514, Protection and Enhancement of Environmental Quality, 1977, as amended.

U.S. DOE, Nevada Operations Office, Final Environmental Impact Statement for the Nevada Test Site and Other Off-site Locations in Nevada, August 1996.

DOE Order 451.1a, National Environmental Policy Act Compliance Program, 10/15/97.

DOE Organization Act, 42 U.S.C. 7112.

U.S. DOE, Office of NEPA Project Assistance, 1988. Draft NEPA Compliance Guide, Volumes I and II.

U.S. DOE/NV, Environmental Protection Division, NEPA Compliance Guide, Volume III (In revision, 1997).

3 CULTURAL RESOURCE MANAGEMENT

REGULATORY SUMMARY

The statutes and legislation discussed in this chapter provide guidelines and processes for the identification and protection of cultural and historic resources including American Indian traditional cultural properties and religious practices.

3.1 ANTIQUITIES ACT OF 1906

The Antiquities Act of 1906 authorizes the President to declare historic landmarks, historic and prehistoric structures, and other objects of historical or scientific interest that are situated on federally owned or controlled lands to be national monuments. In addition, the law requires that an official permit be obtained before anyone appropriates, excavates, injures, or destroys any historical properties located on federally owned or controlled lands. Section 432 of the Act authorizes the Secretary of the Interior (or when applicable, the Secretary of Agriculture, the Army, or the Air Force) to grant permits to institutions they deem qualified to examine ruins and excavations and to gather objects for use by museums, universities, or educational institutions for increasing knowledge and for providing permanent preservation. Section 433 authorizes fines and imprisonment for persons who appropriate, excavate, injure, or destroy such objects on government lands without permission. At the NTS, DOE-controlled land is overseen by the Secretary of Energy. Collections of material remains under this Act are subject to the rules of 43 CFR Part 3.

3.2 NATIONAL HISTORIC PRESERVATION ACT OF 1966

Section 106 of the National Historic Preservation Act of 1966 (NHPA) states that federal agencies must take into account the effect of their undertakings on any district, site, building, structure, or object that is included in, or eligible for inclusion in, the National Register of Historic Places and afford the Advisory Council on Historic Preservation and the Nevada State Historic Preservation Office (SHPO) a reasonable opportunity to comment with regard to such undertaking.

Section 110 of the Act requires federal agencies to establish a program to locate, inventory, and nominate all properties that appear to qualify for inclusion in the National Register of Historic Places. In 1971, President Nixon issued Executive Order No. 11593, which urged federal agencies to nominate sites and to assist state and local governments to preserve historic properties. Properties meeting the criteria are designated as "National Historic Landmarks."

The Sedan Crater on the Nevada Test Site is listed in the National Register of Historical Places as item number 94000183.

3.3 ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979

The Archaeological Resources Protection Act of 1979 provides a comprehensive framework for protecting and regulating the use of archaeological resources on federal and Indian lands. The Act prohibits excavation, removal, damage, or other alteration or defacement of archaeological resources on federal or Indian lands without a properly issued permit. Permits to excavate or remove archaeological resources on the NTS must be obtained from the DOE/NV. Civil penalties may be imposed on violators, and vehicles and equipment used in any violation of the Act may be subject to forfeiture.

The Act also intends to foster increased cooperation and exchange of information between government authorities, the professional archaeological community, and private individuals who have collections of archaeological resources and data which were obtained before October 31, 1979. Collections under this Act are subject to the rules of 43 CFR Part 7, 36 CFR Part 296, 18 CFR Part 1312, and 32 CFR Part 229.

3.4 AMERICAN INDIAN RELIGIOUS FREEDOM ACT

The American Indian Religious Freedom Act is primarily a policy statement that clarifies U.S. policy pertaining to the protection of American Indian religious freedom. The purpose of the Act is to protect and preserve for American Indians their inherent right to freedom to believe, express, and exercise their

traditional religions, including, but not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

3.5 NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

The Native American Graves Protection and Repatriation Act makes provisions for the return of human remains and cultural items, including funerary objects, sacred sites, and objects of cultural patrimony, held in federally funded museums and curatorial facilities to lineal descendants and affiliated American Indian tribes, Alaskan native villages and corporations, and Native Hawaiian organizations.

Human remains or cultural items in the possession or control of a federally funded repository or federal agency before November 16, 1990, must be reported to lineal descendants and affiliated American Indian tribes, Alaskan native villages and corporations, and Native Hawaiian organizations.

The Act requires formal consultation with lineal descendants and Indian tribes, Alaskan native villages and corporations, and Native Hawaiian organizations in deciding the disposition of these human remains or cultural items. Consultation is also required in the preparation of inventories of human remains and cultural items in federally funded repositories and federal agencies and in the event of the excavation or discovery of human remains or cultural items on federal or tribal lands.

APPLICABILITY

Regulations for the protection of historical and cultural properties are applicable to DOE/NV activities involving land disturbances, building modifications, and activities that could directly or indirectly affect American Indian remains or sacred or religious sites or access to such sites, and affect non-Indian cultural resources.

PROCESS FOR COMPLIANCE

Regulations that implement the provisions of the laws discussed above are contained in Title 36 of the Code of Federal Regulations, Parts 60, 61, 63, 65, 67, and

800 (for the National Historic Preservation Act), and Part 296 (for the Archaeological Resources Protection Act of 1979). In Title 43 it is Part 3 (for the Antiquities Act of 1906) and Part 7 (for all archaeological resource protection laws). Title 25, Indians, derives authority for Part 261 from the Antiquities Act of 1906. (See references at the end of this chapter.)

In general, compliance with the National Historic Preservation Act regulations ensures compliance with the other laws of U.S.C. Title 16. In cases where American Indian religious sites may be involved, consultation with representatives of the affected tribe(s) is required in accordance with Executive Order 13007.

For activities on Pahute and Rainier Mesas, DOE/NV has developed a programmatic agreement with the Nevada State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) to facilitate compliance with the NHPA. Activities proposed for Pahute or Rainier Mesas must follow the Long-Range Study Plan established by the programmatic agreement for these areas.

It is DOE/NV policy to conduct cultural resource surveys and/or historical evaluations before starting land-disturbing activities or building modifications to identify historic properties that may potentially be affected by the proposed project. Requests for surveys are submitted to the ESHD by DOE/NV contractors and other users in accordance with Procedural Instruction (PI) NV PI 96-005, *Protection of Endangered Species and Cultural Resources*. ESHD will initiate the survey through the Cultural Resource Management support contractor, who conducts the survey and prepares the report.

Upon receiving the survey report, the DOE/NV must consult with the Nevada State Historic Preservation Officer regarding the eligibility to the National Register of Historic Places of any cultural resources recorded during the survey and determination of project effect. If no historic properties are found, the project may proceed.

If historic properties are found and a finding of "NO EFFECT" is made, the project may proceed. If historic properties are found and a "NO ADVERSE EFFECT" finding is made, then the project may proceed in accordance with protective measures proposed by the DOE/NV and concurred with by the SHPO. If an

"ADVERSE EFFECT" finding is made, then the DOE/NV must consult further with the SHPO and the Advisory Council on Historic Preservation to identify and implement mitigating measures.

Contractors and corporate tenants may not:

- remove any archaeological resources from DOE/NV-operated sites (except as an approved mitigation effort);
- destroy or disturb any artifacts, rock drawings, or other archaeological resources on DOE/NV-operated sites.

DOE/NV CONTACTS

The point of contact for compliance with cultural resource protection laws is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Antiquities Act of 1906, 16 U.S.C. 431-433 (1988).

Historic Sites, Buildings, and Antiquities Act, 16 U.S.C. 461-467 (1988).

National Historic Preservation Act, as amended, 16 U.S.C. 470 (1988).

Archaeological and Historic Preservation Act, 16 U.S.C. 469-469c-1 (1988).

Archaeological Resources Protection Act of 1979, as amended, 16 U.S.C. 470aa-470mm (1988).

American Indian Religious Freedom Act, 42 U.S.C.A. 1996 (1994).

Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001-3013 (1995 Supp.).

Exec. Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971, (codified in 16 U.S.C. 470 (1988)).

Executive Order 13007, Protection of Sacred Sites.

36 CFR 60, National Register of Historic Places.

36 CFR 61, Procedures for Approved State and Local Government Historic Preservation's Programs.

36 CFR 63, Determinations of Eligibility for Inclusion in the National Register of Historic Places.

36 CFR 65, National Historic Landmarks Program.

36 CFR 67, Historic Preservation Certification Pursuant to Sec. 48(g) and Sec. 170 (h) of the Internal Revenue Code of 1986.

36 CFR Part 800, Protection of Historic and Cultural Properties.

43 CFR Part 3, Preservation of American Antiquities.

43 CFR Part 7, Protection of Archaeological Resources.

National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties, National Park Service (revised for the Internet 1995).

Procedural Instruction (PI), NV PI 96-005, Protection of Endangered Species and Cultural Resources.

Title 25, of the Code of Federal Regulations, Indians.

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4 NATURAL RESOURCE MANAGEMENT

4.1 HISTORIC SITES ACT OF 1935

REGULATORY SUMMARY

The purpose of the Historic Sites Act of 1935 is to identify, study, designate, recognize, and maintain *national natural landmarks*; and to encourage preservation of nationally significant examples of ecological and geological features, including fossil evidence of evolution. The Act is administered by the U.S. Department of the Interior through the National Park Service (NPS). Locations designated as such landmarks are listed in the National Registry of Natural Landmarks according to the rules of 36 CFR Part 62.

Suggestions for national landmarks may come from federal agencies that conduct inventories to identify areas of special concern to their programs. The NPS evaluates and determines if a site qualifies and may nominate it, after due notification process, to the Secretary of the Interior, who may designate it as a National Natural Landmark to be listed in the National Registry of Natural Landmarks.

APPLICABILITY

There are four National Natural Landmarks designated for the state of Nevada. One, the Timber Mountain Caldera, is on the Nevada Test Site. It is about ten miles north of Yucca Mountain on the eastern border of Area 18 and extends into the Nellis Air Force Range. Any activities proposed for DOE/NV-operated land should consider potential impacts on the Timber Mountain Caldera.

PROCESS FOR COMPLIANCE

Federal agencies are responsible for considering the existence and location of National Natural Landmarks when assessing the effects of their actions or the permitted actions of others as part of the environmental review under the National Environmental Policy Act.

DOE/NV CONTACTS

The point of contact for compliance with the Historic Sites Act is the Director of the Environment, Safety & Health Division, (702) 295-1433.

REFERENCES

Historic Sites Act of 1935, 16 U.S.C. 461

36 CFR 62, National Natural Landmarks Program.

National Registry of Natural Landmarks (1992).

4.2 ENDANGERED SPECIES ACT OF 1973

REGULATORY SUMMARY

The Endangered Species Act (ESA) of 1973 is administered by the U.S. Department of Interior through the Fish and Wildlife Service. The Secretary of Commerce, acting through the National Marine Fisheries Service, is authorized to list marine mammals, and the FWS is empowered to list all other organisms. *Endangered species* means any species which is in danger of extinction throughout all or a significant portion of its range. *Threatened species* means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Threatened and endangered species are listed in 50 CFR Parts 17.11 and 17.12. A *proposed species* is any species of fish, wildlife, or plant that is proposed in the Federal Register to be listed under Section 4 of the ESA. *Critical habitat* refers to an area designated as critical habitat listed in 50 CFR Parts 17 or 226.

Section 7 of the ESA requires federal agencies, in consultation with the FWS, to insure that any action taken is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of a proposed or designated critical habitat of these species.

However, under Section 7, the ESA allows federal agencies and permittees, as well as other persons, to take, capture, remove, or destroy listed species under

certain conditions when the taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Implementing regulations for Section 7 are found in 50 CFR Part 402.

Any state law or regulation respecting the taking of an endangered or threatened species may be more restrictive than the exemptions or permits provided for in the Act, but not less restrictive than the prohibitions of the Act.

APPLICABILITY

This Act is applicable to all DOE/NV and corporate tenant activities that may impact any listed species, proposed species, critical habitat, or proposed critical habitat. There is only one species endemic to the NTS that is on the list of threatened or endangered species (50 CFR 17.11); the threatened desert tortoise (*Gopherus agassizii*).

PROCESS FOR COMPLIANCE

It is DOE/NV policy to conduct biological surveys before starting land-disturbing activities in previously undisturbed areas to identify any listed species or species of concern that may be potentially impacted by the proposed project. Requests for surveys are submitted to the ESHD by DOE/NV contractors and other users in accordance with, NV PI 96-005, *Protection of Endangered Species and Cultural Resources*. The ESHD will initiate the survey through the ESA contractor, who conducts the survey and prepares the report. If no listed or proposed species is found or the area is not in a designated critical or proposed critical habitat, the project may proceed. If listed species are found in the project area or the area is in a designated critical or proposed critical habitat, the ESHD determines if the project is "not likely to adversely affect" such species and initiates informal consultation with the FWS. Upon FWS concurrence with the DOE/NV's determination of "not likely to adversely affect," the project may proceed. If the project is "likely to adversely affect" any listed species, or if the FWS disagrees with the DOE/NV's "not likely to adversely affect" determination, then the ESA support contractor prepares a Biological Assessment and the DOE/NV initiates formal Section 7 consultation with FWS. Within 135 days after formal consultation is initiated, the FWS issues a Biological Opinion

delineating the terms and conditions under which the project may proceed.

INFORMATION AND REPORTING REQUIREMENTS

The ESHD maintains records and maps of known locations of threatened, endangered, proposed, or state-listed species (see the following two sections) on the NTS. The ESHD also retains copies of survey reports, biological assessments, biological opinions, and other documentation concerning the protection of threatened, endangered, proposed, or state-listed species on the NTS.

DOE/NV CONTACTS

The point of contact for compliance with the ESA is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

- Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1543.*
- 50 CFR Part 17, Endangered and Threatened Wildlife and Plants.*
- 50 CFR Part or 226, Designated Critical Habitat*
- 50 CFR Part 402, Interagency Cooperation - Endangered Species Act of 1973, as amended.*
- NV PI 96-005, Protection of Endangered Species and Cultural Resources.*

4.3 NEVADA WILDLIFE STATUTES AND REGULATIONS

REGULATORY SUMMARY

The Nevada wildlife statutes are administered and enforced by the Nevada Department of Wildlife (NDOW). These laws and regulations provide for the protection and management of wildlife which are classified in the Nevada Revised Statutes (NRS 501.105) as: wild animals, further classified as game or fur-bearing, protected, or unprotected; wild birds, further classified as game, protected, or

unprotected; fish, further classified as game, protected, or unprotected; reptiles, further classified as protected, or unprotected; amphibians, further classified as game, protected, or unprotected; mollusks, either protected or unprotected; and crustaceans, either protected or unprotected. The Nevada Administrative Code (NAC) gives the following definitions: *Endangered* means the species is in danger of extinction throughout all or a significant portion of its range. *Rare* means the species, although not presently threatened with extinction, exists in such small numbers that it may become endangered if its environment deteriorates (NAC 503.010). NRS 503.585 provides that any animal determined to be threatened with extinction shall be placed on a list of fully protected species, and no member of its kind may be captured, removed, or destroyed at any time by any means except under special permit issued by the NDOW. NRS 503.610 provides protection of the American eagle and the golden eagle to be congruous with federal law, and NRS 503.620 protects birds included in the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703 et seq.).

Under Nevada regulations (NAC 503.050), protected birds include all species of nongame birds protected by the provisions of federal law. This provision is not stated explicitly for mammals, fish, amphibians, or reptiles in the Nevada Administrative Code; however, in the case that state law is not as stringent as federal law, on federal lands, the federal provisions to protect animals in Nevada will prevail.

Wildlife habitat is protected under NAC Chapter 504, specifically by controlling the alteration of a stream system or watershed. An application must be approved by the NDOW and a permit issued before commencing planned construction.

APPLICABILITY

The Nevada wildlife statutes are applicable to any DOE/NV and corporate tenant activities that involve land disturbances, drilling, or construction projects.

Only one animal indigenous to the Nevada Test Site is listed by the state as rare or endangered, the desert tortoise, *Gopherus agassizii*.

PROCESS FOR COMPLIANCE

In general, the state of Nevada does not require federal agencies to apply for permits under the state wildlife statutes; however, there are exceptions. Contractors

and other users are advised to contact the DOE/NV Environment, Safety & Health Division before beginning any project. Corporate tenants will be required to obtain permits.

The DOE/NV's biological support contractor maintains a current list of state-sensitive species as defined in the cited regulations and codes. It is DOE/NV policy to conduct biological surveys before starting land-disturbing activities in previously undisturbed areas to identify any state-sensitive species that may be potentially impacted by the proposed project. Requests for surveys are submitted to the ESHD by DOE contractors and other users in accordance with NV PI 96-005, *Protection of Endangered Species and Cultural Resources*. The ESHD will initiate the survey through the biological support contractor, who conducts the survey and prepares the report. If any state-sensitive species is found in the project area, the ESHD consults with the project proponent to explore ways to mitigate or lessen the impact to such species.

INFORMATION AND REPORTING REQUIREMENTS

For projects that do require a permit from the state, a field study of the work area may be part of the analysis required under Nevada law to determine (1) the types of wildlife at the site, and (2) possible impacts to wildlife as a result of the work to be performed at the site. If the work could impact any animal species listed by Nevada as rare or endangered, a biological study must be completed, and written permission must be issued by the DOE/NV indicating that consultation with the state has been conducted satisfactorily and that state permits have been obtained, if needed, before project work can begin.

DOE/NV CONTACTS

The point of contact for initiating an ecological study is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Migratory Bird Treaty Act of 1918 as amended
(16 U.S.C. 703 et seq.)

Nev. Rev. Stat., Title 45, Wildlife, Chapters 501 - 506.

Nev. Admin. Code 503.010 - 503.080, Rare and Endangered Species.

Nev. Admin. Code 504.510 - 504.550, Alteration of Stream System or Watershed.

NV PI 96-005, Protection of Endangered Species and Cultural Resources.

4.4 NEVADA VEGETATION STATUTES

REGULATORY SUMMARY

The Nevada vegetation statutes are administered by the Division of Forestry, Nevada Department of Conservation and Natural Resources. The laws provide for the broad protection of indigenous flora of the state, and NRS 527.010 lists fully protected plants i.e., those declared to be threatened with extinction. NRS 527.270 provides that any plant declared to be threatened with extinction shall be placed on a list of fully protected species, and no member of its kind may be possessed, moved, mutilated, or destroyed at any time by any means except under special permit issued by the State Forester Firewarden (F/FW). NRS 527.060-.120 specifies the protection of Christmas trees, cacti, and yucca. Removal of six or more plants in one day or removal or possession of fewer than six plants a day for seven or more consecutive days constitutes commercial harvest and requires permits for removal and shipping. Forms and permits, shown in NRS 527.020, may be obtained from the Division of Forestry.

APPLICABILITY

The Nevada state vegetation statutes are applicable to all DOE/NV and corporate tenant activities that involve land disturbances, drilling, or construction programs.

PROCESS FOR COMPLIANCE

So long as an activity is within the scope of the withdrawal agreement and part of the management of the withdrawn lands, the state of Nevada does not require federal agencies to apply for permits under the state vegetation statutes. In reciprocity, the state agencies do not have to get federal permits either. However, a DOE/NV contractor or NTS user organization would have to obtain a state permit to take

protected species if the taking was intentional and part of a planned activity. Assurance of natural resource protection is given under various memoranda of understanding between the DOE/NV and the state of Nevada as cooperating agencies. Corporate tenants may have to obtain a permit.

In the case where a permit is required, compliance with these statutes requires preactivity consultation with the State F/FW. The State F/FW must be consulted to ensure that (1) necessary permits are obtained before destroying or removing any flora at the site, and that (2) no state-protected vegetation will be affected. After initial consultations, the applicant must gather pertinent information, including types and numbers of flora, current protective status, and proposed impact as a result of the activity.

The state of Nevada currently lists 25 species of plants that are declared to be fully protected species. Only one is found on the Nevada Test Site, *Astragalus beatleyae*.

It is DOE/NV policy to conduct biological surveys before starting land-disturbing activities in previously undisturbed areas to identify any state-sensitive species that may be potentially impacted by the proposed project. Consultation with the State F/FW must take place through all phases of a project, from site identification to analysis, development, and use.

INFORMATION AND REPORTING REQUIREMENTS

A biological survey must be performed before initiating land-disturbing activities in previously undisturbed areas of a DOE/NV site.

DOE/NV CONTACTS

The point of contact for initiating a biological survey is the Director, Environment, Safety & Health Division, (702) 295-1433.

REFERENCES

Nev. Rev. Stat. 527.010 - 527.320, Protection and Preservation of Timbered Lands, Trees and Flora.

5 AIR POLLUTION CONTROL

5.1 CLEAN AIR ACT—FEDERAL, STATE AND LOCAL REQUIREMENTS

REGULATORY SUMMARY

A product of no less than ten separate acts of Congress, the Clean Air Act (CAA) authorizes the federal program to ensure preservation of the nation's air resources and protection of the public's health and welfare. Under the act, the U.S. Environmental Protection Agency (EPA) authorizes the state of Nevada to promulgate and administer clean air regulations and to ensure that proper steps are taken to control air contamination from industrial processes and land-disturbing activities. The Nevada air pollution control law (NRS Chapter 445B) establishes the basis for implementing clean air regulations and requiring permits for each air pollution source. The EPA may also delegate authority directly to the counties to promulgate and enforce air regulations. In Clark County, the Air Pollution Control Division of the Clark County Health District has jurisdiction. In Nye County, which includes the NTS, the state retains authority.

The CAA lists radionuclides as hazardous air pollutants. The state of Nevada, in its permitting process for stationary sources, adopts any standard established by the EPA pursuant to 42 U.S.C. 7412(b), the list of hazardous air pollutants, as an "applicable requirement." A stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant [42 U.S.C. 7401 Section 111(a)(3)].

Neither the state nor Clark County have adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) for radionuclides into their regulations. With regard to radionuclide emissions, contractors and other NTS users should follow the federal regulations. More information on radioactive air emissions is given in subchapter 5.2.

The Environmental Protection Agency has promulgated certain final rules under provisions of the Clean Air Act Amendments of 1990 that may affect the DOE/NV operations:

- The National Ambient Air Quality Standard for ozone has been lowered (signed by EPA Administrator Browner, July 16, 1997): concentrations are to be measured over an eight-hour period (instead of one hour) and must not exceed 0.08 ppm (down from 0.12 ppm).
- A new particulate standard regulates particles 2.5 microns or less in diameter. The annual concentration limit is 15 micrograms of PM-2.5 per cubic meter of air; the 24-hour standard is 65 micrograms per cubic meter of air.
- The Clark County Nonattainment Area was reclassified from a "moderate" to a "serious" nonattainment area for particulate matter in 1993 because of fugitive dust; and for carbon monoxide in 1997 (40 CFR 81).
- Protection of Stratospheric Ozone rules require that refrigerants be recovered during the servicing and disposal of air-conditioning or refrigeration equipment and that federal agencies revise their procurement regulations to maximize the substitution of safe alternatives for ozone-depleting substances as identified under Section 612 of the Act and certify same to the Office of Management and Budget (OMB) by October 1994 (40 CFR Part 82, subpart D). Acceptable substitutes are listed in the appendices of 40 CFR 82, Subpart G.
- Also, owners of commercial refrigeration and industrial process refrigeration equipment must have all leaks repaired if leaking at a rate greater than rates (and under the circumstances) stated in 40 CFR 82.156.
- Nonessential products containing Class I or II ozone-depleting substances are banned with specific exceptions, notably those with medical uses and halogen fire extinguishers (40 CFR 82, Subpart C).
- Federal actions must conform to the State Implementation Plan such that emissions of criteria pollutants in a nonattainment or maintenance area do not exceed the rates in 40 CFR 51.853(b)(1) or are not *de minimis* as listed in §51.853(c). A "nonattainment area" is any area that does not meet

the national primary or secondary ambient air quality standard for a given pollutant. [42 U.S.C. 7401, Section 107(d)(1)(ii)]. A "maintenance area" is an attainment area that is within 10 years of having been redesignated as such from a nonattainment area. (42 U.S.C. 7505a and 40 CFR 51.852). Presumption of conformance must be documented. Documentation and analysis of conformity typically should be performed during the NEPA review process, because the EPA, state, and local air quality agencies must be notified, and members of the public must be given 30 days to comment (40 CFR Part 51, Subpart W).

- Threshold quantities for toxic and flammable substances for purposes of accidental release prevention are now listed in Tables 1 through 4 in 40 CFR 68.130.
- Owners and operators of stationary sources that have more than a threshold quantity of a toxic or flammable substance in a process must submit a Risk Management Plan to the EPA by the latest of the following dates: June 21, 1999; three years after the date a substance is first listed; or the date a listed substance is first present above a threshold quantity. Guidance for the preparation and submission of a Risk Management Plan can be found at 40 CFR 68.150-68.190. Facilities affected by 40 CFR Part 68 are also subject to rigorous inspection and record-keeping requirements.

The CAA and Nevada regulations require that state, federal, and local ambient air quality standards be established and achieved. Emissions at all sites are subject to examination under "Prevention of Significant Deterioration" (PSD) criteria for ambient air quality (40 CFR 52.21).

APPLICABILITY

Each source of air pollution must operate under a permit issued by the state of Nevada. Each source must be monitored for the permitted contaminants, and the results recorded and reported to the Director, Division of Environmental Protection (NDEP), Nevada Department of Conservation and Natural Resources (NDCNR). Design of modifications to existing facilities or new facilities that affect emissions of hazardous material to the air must be approved by the Director of NDEP before start of construction. The state of Nevada has incorporated by reference parts of

Title 40 of the Code of Federal Regulations, including all of the New Source Performance Standards (40 CFR 60) and the some of the National Emission Standards for Hazardous Air Pollutants (40 CFR 61) into the Nevada Administrative Code (NAC 445B.221).

Typical air emission sources which require construction and operating permits include the following:

- Particulates, sulfur dioxide (SO₂), and nitrogen oxides (NO_x) from fuel burning in steam and hot water generation plants and in boilers; particulate emissions from sources such as incinerators, asphalt batch plants, power plants, boilers; or entrained dust from moving vehicles;
- The emission of volatile organic compound (VOC) vapors from the storage and transfer of certain petroleum fuels and chemicals (solvents), and the operation of degreasers and other processes (paint stripping and metal finishing) which use solvents;
- The emission of NO_x and hydrocarbons from fleet vehicles.

The Nevada Test Site is not a major source (a source with annual emissions, either actual or potential, of 10 or more tons of any hazardous air pollutant, or 100 or more tons of any air pollutant) of air emissions and is not an "affected source" subject to emission reduction requirements under Title IV, Acid Deposition Control, of the Clean Air Act. As such, the NTS is eligible for, and DOE/NV has acquired, a Class II operating permit under Nevada regulations (NAC 445B.291). An owner or operator of a Class II source not subject to federal requirements may request an exemption from the requirement to evaluate air quality through air monitoring. The NTS currently enjoys this status.

All facility operators at DOE/NV sites must periodically determine if their operations are exempt from the CAA minimum requirements for regulation under the Nevada Administrative Code. If a facility is not exempt from the minimum requirements, then the requirements listed below must be met.

COMPLIANCE REQUIREMENTS

Specific compliance requirements are listed below:

- An owner/operator must obtain an operating permit from the state of Nevada for each source of

emissions to the ambient air (NAC 445B.287 to 445B.336).

- Operating permits must be reviewed 5 years after date of issue (NAC 445B.323).
- All emission sources must be monitored for permitted emissions and emission rates. Results of this monitoring must be recorded and reported quarterly to the Director, NDEP (NAC 445B.256 through 445B.267).
- Emission sources must meet those portions of the federal NESHAP regulations (40 CFR 61) that are incorporated by reference into Nevada regulations (NAC 445B.221).
- Approval for open burning must be obtained on a case-by-case basis from the Director of the NDEP (NAC 445B.381).
- Open and incinerator burning, except as specifically exempted, requires approval from the NDEP (NAC 445B.382).
- A plan for emissions reduction for stationary facilities that produce 100 tons per year or more of an air contaminant must be submitted to the Director of the NDEP via the DOE/NV (NAC 445B.230).
- Short-term emissions resulting from maintenance, repair, or testing activities that may exceed clean air standards require written notification to the NDEP at least 24 hours prior to the planned emission (NAC 445B.232).
- All activities involving land disturbances of more than 5 acres must be permitted and reported (NAC 445B.293 and 445B.365).
- Accidents or malfunctions resulting in the emission of pollutants in excess of permit limits require notification to the NDEP within 24 hours after the event (NAC 445B.232). Also see DOE Order 232.1 regarding occurrence reporting.
- Within 15 days after the malfunction or accident, the facility owner/operator must provide the NDEP with the identity and location of the malfunctioning facility and equipment; the time, duration, and magnitude of the emissions; corrective measures;

and documentation of equipment maintenance (NAC 445B.232).

- Nevada state construction and operating permits are required for all new air-emission sources. An existing, single source requires only an operating permit, although new construction and modification may require revision of the facility plan and resubmission to NDEP.
- Nevada state construction and operating permits for single sources must be applied for through the DOE/NV. An on-site contractor is available to provide support to prepare permit applications upon request.
- Nevada state construction and operating permits may not be transferred from one owner, or piece of equipment, to another. A "replacement" permit (to construct or to operate) may be issued with identical conditions.
- A separate Nevada state construction permit is required for each new or modified facility. The permit must be issued prior to the construction or modification of the facility.
- If an existing source which had an operating permit is moved, a change-of-location form must be submitted to the NDEP.

Exemptions

The following existing and new single sources do not require permits to construct or operate (NAC 445B.293):

- Air-conditioning or fuel-burning equipment having a rating of less than 4,000,000 British Thermal Units (BTUs) per hour or that operate fewer than 100 hours per calendar year;
- Motor vehicles and special mobile equipment;
- Residential and commercial housekeeping vacuum systems;
- Incinerators with less than 25 lb (11 kg) per hour rated burning capacity;

- Storage containers for gasoline, petroleum distillate, or other volatile organic compounds having a capacity of less than 40,000 gallons;
- Equipment used exclusively for the processing of food for human consumption;
- Portable internal combustion engines less than 500 horsepower, or if greater than 500 horsepower, those that operate less than 100 hours per calendar year;
- Stationary internal combustion engines less than 250 horse power, or if greater than 250 horsepower, those that operate less than 100 hours per calendar year;
- Emergency generators;
- Disturbing less than 5 acres of topsoil;
- Coal-burning equipment with a maximum allowable throughput of less than 50 lb (23 kg) per hour; and
- Dust-producing equipment processing less than 50 lb per hour.

Clark County Air Pollution Control Regulations

The Clark County Health District Air Pollution Control Division is the permitting agency for all Clean Air Act permitting requirements in Clark County. Certain provisions of the Clark County Air Pollution Control Regulations differ from those of the state. Some are listed below:

- The Ambient Air Quality Standard for sulphur dioxide is lower: the annual arithmetic mean is 60 $\mu\text{g}/\text{m}^3$; the maximum 24-hour concentration is 260 $\mu\text{g}/\text{m}^3$. (See §11.)
- A Dust Control Permit is required for construction activities that disturb only $\frac{1}{4}$ or more acres. (See §§17 and 41.)
- Best Available Control Technology must be applied to boilers and steam generators with a rated heat input of 2 million BTU/hr or greater. (See §49.)

INFORMATION AND REPORTING REQUIREMENTS

To comply with the CAA and implementing regulations, the following information is required:

- Emission reduction plans (for large sources);
- Emission types;
- Emission quantities;
- Number of BTUs per hour (for air conditioning units or fuel burning equipment); and
- Number of acres of land disturbed (for land-disturbing activities).

DOE/NV CONTACTS

The principal point of contact for compliance with the Clean Air Act is the Director, Environment, Safety & Health Division, (702) 295-1433.

NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES CONTACTS

The principal point of contact is the Director or his designee. All excess emissions shall be reported within 24 hours to the Director's designee at (702) 687-5065. Written communication should be addressed to the Director's designee, Division of Environmental Protection, 123 West Nye Street, Carson City, NV 89710.

CLARK COUNTY HEALTH DISTRICT, AIR POLLUTION CONTROL DIVISION CONTACTS

Air Pollution Control Division at (702) 383-1276, or after 4:30 p.m. weekends, and holidays, (702) 385-1291.

REFERENCES

Clean Air Act, as amended, 42 U.S.C. 7401 et seq.

40 CFR 50, National Primary and Secondary Ambient Air Quality Standards.

40 CFR 51, Requirements for Preparation, Adoption, and Submittal of Implementation Plans.

40 CFR 60, New Source Performance Standards.

40 CFR 61, National Emissions Standards for Hazardous Air Pollutants.

40 CFR 68, Subpart F, Regulated Substances for Accidental Release Prevention.

40 CFR 81, Designation of Areas for Air Quality Planning Purposes.

40 CFR 82, Protection of Stratospheric Ozone.

Nev. Admin. Code, Chapter 445B, Air Controls.

Air Pollution Control Regulations, Board of Health of Clark County.

Rodgers, William H., Jr. Environmental Law. Volume I, West Publishing Co., St. Paul, 1986.

DOE O 232.1, Occurrence Reporting and Processing of Operations Information (Change 002, 8/12/96).

5.2 RADIOACTIVE AIR EMISSIONS

REGULATORY SUMMARY

Radioactive emissions are regulated as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Clean Water Act (CWA), and the Clean Air Act. Section 112 of the CAA generally designates radionuclides as hazardous air pollutants. Section 103 of CERCLA regulates radionuclide releases to all media. Reportable Quantities (RQs) of radionuclides are established in Section 311 of the CWA and are listed in Appendix B of 40 CFR 302.4.

The National Emissions Standards for Hazardous Air Pollutants state that emissions of radionuclides to the ambient air from DOE facilities shall not exceed those amounts that would cause any member of the public to receive, in any year, an effective dose equivalent 10 mrem/year (40 CFR 61.92).

APPLICABILITY

These regulations are applicable to DOE/NV and corporate tenant activities involving the use of radioactive materials.

PROCESS FOR COMPLIANCE

To achieve compliance with the CAA radioactive air emissions regulations, a DOE/NV contractor or NTS user must document and report all releases of radionuclides to DOE/NV. DOE/NV will report all releases as soon as possible, but in any event, no later than 24 hours after the occurrence, to the Director of the Nevada Division of Environmental Protection, the EPA, and the National Response Center (NRC). In the case of a release during transport, DOE/NV must notify the Department of Transportation (DOT) within 24 hours, and the state of Nevada (Department of Environmental Protection) as soon as possible.

Certain routine releases of radioactive materials require EPA permits, and these permitted releases must comply with the permit conditions and all applicable regulations. Unpermitted releases are regulated under certain sections of CERCLA and the CAA. All other facilities must be in immediate compliance with radioactive emissions standards.

INFORMATION AND REPORTING REQUIREMENTS

A nonpermitted release of RQs of radionuclides into the air must be reported immediately to DOE/NV as an unusual occurrence. Proper documentation of the unplanned releases should include the facility, date, time, volume, amount of radiation, and type of material released. An estimate of the immediate effects of the release, any injuries, the cause of the release, and steps taken to prevent a recurrence should be included.

The DOE/NV must be notified immediately of an environmental or health-threatening release. Minor releases less than the RQs should be reported to the DOE/NV as soon as possible, but no later than 24 hours after the occurrence of the event.

Effective dose equivalents must be calculated for the sum of all radioactive emissions from DOE/NV sites and reported to the state and to the EPA annually.

DOE/NV CONTACTS

The principal point of contact regarding the radioactive air emissions is the Director, Environment, Safety & Health Division, at (702) 295-1433. For radioactive emissions in work areas, also contact the Director, Environment, Safety & Health Division.

NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES CONTACTS

The principal point of contact is the Department Director or his designee. All excess emissions shall be reported within 24 hours to the Director's designee at (702) 687-5065. Written communication should be addressed to the Director's designee, Department of Environmental Protection, 123 West Nye Street, Carson City, NV 89710.

REFERENCES

Clean Air Act, as amended, 42 U.S.C. 7401 et seq..

40 CFR 60, Standards of Performance for New Stationary Sources.

40 CFR 61, National Emission Standards for Hazardous Air Pollutants.

40 CFR 302.4, Designation of Hazardous Substances: Appendix B, Radionuclides.

Nev. Admin. Code, Chapter 445B, Air Controls (1996).

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq.

Clean Water Act, as amended, 33 U.S.C. 1251 et seq.

DOE Order 232.1, Occurrence Reporting and Processing of Operations Information (Change 002, 8/12/96).

6 WATER POLLUTION CONTROL

6.1 CLEAN WATER ACT

REGULATORY SUMMARY

The body of law commonly known as the Clean Water Act began with the Federal Water Pollution Control Act of 1972, supplemented by the Clean Water Act of 1977 and the Water Quality Act of 1987. These three acts completely replaced the text of earlier legislation. The Act establishes ambient water quality standards and effluent discharge limitations. Regulations promulgated under this Act require all persons responsible for point source discharges to utilize technology-based controls to meet effluent limitations.

The EPA has authorized the state of Nevada, under provisions of the CWA, to establish state ambient water quality standards and water quality management plans. The National Pollutant Discharge Elimination System (NPDES) program allows Nevada to issue permits for all direct discharges of pollutants to surface waters of the state from new or existing sources. Discharges to Publicly Owned Treatment Works (POTWs) (or "indirect discharges," by definition) are regulated under the pretreatment standards at 40 CFR 403.

In November 1990, the EPA published its final storm water regulations (40 CFR 122.26) which require NPDES permits for discharges of storm water associated with an industrial activity. Storm water runoff that is discharged via one or more point sources into the waters of United States, either directly or through a storm sewer system, is regulated under the new storm water regulations. To determine if a storm water discharge is regulated, refer to Figure 6.1.

In general, federal regulations can be summarized as follows: A NPDES permit is required for any direct discharge to waters of the United States from a new or existing source. The use of Best Management Practices (BMPs) to control the discharge of toxic and hazardous pollutants is mandated under the NPDES and must also be addressed during the permitting process. Unlike effluent limitations, BMPs do not have numerical limits, but rather specify the management practices that must be implemented. Three levels of technology for industrial sources are used for NPDES permit applications: (1) Best Practicable Control Technology (BPCT), (2) Best Conventional Technology (BCT), and (3) Best Available Technology (BAT) economically achievable. NPDES permit fact sheets usually specify

which technology to use as the basis for discharge limits for a particular permitted facility.

Permit limits specify the amount of pollutants that can be discharged, expressed in terms of average monthly and maximum daily loads and concentration limits for specific contaminants. The permit may also include compliance schedules and special monitoring, testing, or reporting requirements. Permits are valid for five years and must be renewed within 180 days of expiration.

Reports summarizing the results of NPDES-permitted discharge monitoring must be submitted to the NDEP yearly, or more frequently if required by the specific permit (NAC 445A.252). Information requirements include basic facility descriptions, lists of current environmental permits, outfall descriptions, drawings, flow estimates, treatment process descriptions, proposed compliance schedules, effluent characterizations, and, in some cases, bioassay toxicity test results. If the facility can be classified within one of the 34 primary industrial categories, the applicant may be required to sample for toxic metals, cyanide, phenols, and certain other substances specifically listed on the application form.

New Source Performance Standards (NSPSs) impose technology-based requirements on new effluent sources (40 CFR 122.29). Most NSPSs are based on BAT levels. The NSPSs are specific for each proposed industrial category, and these standards must be achieved when the new source begins discharging wastewater.

Pretreatment standards for indirect discharges via privately or publicly-owned treatment works apply to both new and existing industrial sources. Pretreatment standards are divided into general (40 CFR 403) and categorical (40 CFR 403.6). The categorical standards control certain toxic pollutants.

Nonpoint source pollution control under the CWA directs Nevada to formulate area-wide nonpoint pollution control plans. An NPDES permit cannot be issued where the permit may conflict with nonpoint discharge pollution controls.

Figure 6.1 Storm Water Regulation Scheme

APPLICABILITY

The CWA regulations are generally applicable to DOE/NV facilities which discharge any materials into "surface waters of the United States." In Nevada, this becomes "waters of the state" which includes all streams, lakes, ponds, impounding reservoirs, marshes, water courses, waterways, wells, springs, irrigation systems, and drainage systems; and all bodies or accumulations of water, surface and underground, natural or artificial (NAC 445A.415). The Nevada Water Pollution Control Program is approved by the EPA and is administered by the Nevada Division of Environmental Protection within the Nevada Department of Conservation and Natural Resources. The NDEP must approve and issue a permit before any discharges may be released from a facility (NAC 445A.228 through 445A.263).

PROCESS FOR COMPLIANCE

The state of Nevada has adopted (in NAC 445A.254) most of the federal effluent standards from 40 CFR Subchapter N, "Effluent Guidelines and Standards."

Facilities that discharge waste effluents must file a permit application to the NDEP. DOE/NV contractors and national laboratories are required to provide complete permit applications to the DOE/NV for review. Corporate tenants should submit permit applications directly to the state.

The permit application must include proposed effluent limitations, a proposed schedule of compliance, and a description of any special conditions that could impact the discharge (NAC 445A.243). To meet necessary water quality standards and limitations and other applicable requirements, the NDEP specifies average and daily maximum quantitative limitations for the level of pollutants in the authorized discharge.

Schedules for compliance, particularly for noncompliant facilities, are set by the NDEP (NAC 445A.244). When the schedule for compliance exceeds nine months, the NDEP specifies interim requirements, as well as the dates for meeting those requirements.

Any change in a permitted facility or in the conditions of the discharge permit will require a new permit if the existing permit limits are exceeded (NAC 445A.258). If the existing permit limits are not exceeded as a result of the change, the NDEP must be informed of the change and its effect on the discharge. Permits do not exceed five years (NAC 445A.241).

Changes in toxic pollutant level regulations made after the issuance of a permit may be incorporated into the existing permit by the NDEP or included in a new permit.

INFORMATION AND REPORTING REQUIREMENTS

All holders of state discharge permits must record discharge flow rates and results of sample analyses for parameters specified in the permit. These records must be maintained for three years (NAC 445A.251).

NTS users are required to submit Discharge Monitoring Reports (DMR) to the DOE/NV. DMRs give a summary of the discharger's records on a monthly (or quarterly) basis for flow measurement, sample collection, and laboratory analysis. In case of noncompliance, a Noncompliance Report must be submitted that includes the period of noncompliance and plans to minimize or eliminate a recurrence. If the noncompliance involves a toxic substance or is otherwise considered a threat to drinking water or human health, DOE/NV must notify the EPA and the NDEP within 24 hours.

POLLUTION RELEASE REPORTING

Discharges of hazardous substances in excess of reportable quantities must be reported immediately to the DOE/NV authority who, in turn, will report to the proper state and federal agencies. Pollutant releases must be reported to the NDEP as soon as possible after the owner/operator of a facility has knowledge of such a release, but not later than the end of the first working day after the release (NAC 445A.347). The notice must be by telephone at 800-992-0900, extension 4670, or (702) 687-4670. Any visible discharges of oil must also be reported.

The following pollutants are subject to the notice requirements of NAC 445A.347:

- (a) A release in a quantity equal to or greater than that which is required to be reported to the National Response Center pursuant to 40 CFR Part 302.
- (b) A release consisting of any quantity of pollutants, hazardous waste, as defined in NRS 459.430; or contaminants, as defined in NAC 445A.325, and the pollutant, hazardous waste or contaminant is not listed in 40 CFR 302.4.

A release consisting of a petroleum product:

- (1) Which is released to the soil or other surfaces of land in a quantity greater than 25 gallons; or

- (2) Discovered on or in the groundwater or in at least 3 cubic yards of soil during excavation of soil, subsurface exploration, monitoring of groundwater, or any other subsurface activity.

DOE/NV CONTACTS

The point of contact for CWA compliance information is the Director, Environment, Safety & Health Division, at (702) 295-1433.

STATE OF NEVADA CONTACTS

Contacts with Nevada regulatory and emergency response agencies regarding DOE/NV activities will be made only by authorized DOE/NV personnel. Corporate tenants should contact the state directly. The administrator of the NDEP must be notified by telephone at 800-992-0900, extension 4670, or (702) 687-4670 no later than the end of the first working day after a release of hazardous or toxic materials (NAC 445A.347).

REFERENCES

Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq.

33 CFR 328, Definition of Waters of the United States.

33 CFR 329, Definition of Navigable Waters of the United States.

33 CFR 330, Nationwide Permits.

40 CFR 110, Discharge of Oil.

40 CFR 112, Oil Pollution Prevention.

40 CFR 116, Designation of Hazardous Substances.

40 CFR 117, Determination of Reportable Quantities for Hazardous Substances.

40 CFR 121, State Certification of Activities Requiring a Federal License or Permit.

40 CFR 122, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.

40 CFR 123, State Program Requirements.

40 CFR 124, Procedures for Decisionmaking.

40 CFR 125, Criteria and Standards for the National Pollutant Discharge Elimination System.

40 CFR 129, Toxic Pollutant Effluent Standards.

40 CFR 133, Secondary Treatment Regulation.

40 CFR 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants.

40 CFR 230, Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material.

40 CFR 302, Designation, reportable quantities, and notification.

40 CFR Subchapter N (Parts 401 to 471, Effluent Guidelines and Standards.

40 CFR 403, General Pretreatment Regulations for Existing and New Sources of Pollution.

EO 11735, Delegating Functions of the President under the Federal Water Pollution Control Act.

EO 12088, Federal Compliance.

Nev. Admin. Code, 445A.070 to 445A.348, Water Pollution Control (1996).

Nev. Rev. Stat., 445A.300 to 445A.730, Nevada Water Pollution Control Act (1995).

6.2 SEWAGE COLLECTION, TREATMENT AND DISPOSAL

REGULATORY SUMMARY

The Clean Water Act is the basic federal legislation governing sanitary wastewater discharges. The implementing federal regulations are contained in 40 CFR 122, which covers NPDES permitting; 40 CFR 403, which establishes the general pretreatment program; and 40 CFR 405 through 471, which contain categorical effluent limitations.

Sewage Treatment Facilities

Nevada Administrative Code Sections 445A.283 to 445A.292 regulate the design, construction, and operation of sewage treatment works. The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, grants operating

permits for such facilities in an effort to prevent and/or limit discharges of sewage to state waters, including groundwater. State regulations for treatment works in Nevada are administered by the NDEP. A sewage treatment plant with a capacity greater than 10,000 gallons per day or a package plant with capacity greater than 5,000 gallons per day requires a certified operator per the provisions of NAC 445A.287 through 445A.292.

Individual Sewage Disposal Systems

Individual sewage disposal systems (primarily septic tanks) are defined in NAC 444.764. An "individual sewage disposal system" means a system of sewage treatment tanks or tank and effluent absorption or percolation facilities serving a single dwelling or structure.

Septic tanks of less than 5000 gallons capacity are regulated by NAC 444.750-.840; these regulations are administered by the State Health Department. Septic tanks of capacity greater than 5000 gallons are administered by the Nevada Division of Environmental Protection. Design capacities are usually based on 50 gallons per person in dwellings and 25 gallons per person in camps.

A permit must be obtained (NAC 444.784) from the State Health Department or local health authority to construct, alter, or extend an individual sewage disposal system. A request for permit must include a scale drawing of the property showing the installation and the distance within 500 feet of any water course (pond, lagoon, or stream), the location of the percolation test hole, the boring test hole, and the location of wells, among other information. Soil characteristics, depth to the water table and bedrock, and percolation test results must accompany the application. Also, in NAC 444.818, any provision not covered in NAC 444.750-.840 must meet the specification of the *Uniform Plumbing Code* or the U.S. Public Health Service *Manual of Septic Tank Practices*.

APPLICABILITY

Regulations for sewage collection systems are applicable to DOE/NV and corporate tenant facilities. All facilities must have sewage collection systems to prevent and limit untreated pollutant discharges into waters of the state. Corporate tenant facilities that are connected to a DOE/NV treatment works do not need a separate permit.

PROCESS FOR COMPLIANCE

Complete engineering plans and specifications for the disposal of sewage must be submitted to the appropriate state agency for review and approval. System plans and specifications must be prepared by a sanitary engineer licensed in the state of Nevada. In addition, the collection systems must be located outside the 100-year floodplain and wetlands areas (refer to Executive Order No. 11988, Floodplain Management, and Executive Order No. 11990, Protection of Wetlands).

INFORMATION AND REPORTING REQUIREMENTS

Two permits are required: one for system design and construction and another for operation and discharge. In addition, all sewage collection systems must meet all other applicable federal, state, and local regulations. Noncompliances must be reported to the Director of the NDEP.

DOE/NV CONTACTS

The principal point of contact for sewage collection systems compliance information is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

- Clean Water Act, as amended, 33 U.S.C. 1251 et seq.*
- 40 CFR 122, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System.*
- 40 CFR, Subchapter N (Parts 401 to 471), Effluent Guidelines and Standards.*
- 40 CFR 403, General Pretreatment Regulations for Existing and New Sources of Pollution.*
- EO 11988, Floodplain Management, May 24, 1977; Amended by EO 12148 of July 20, 1979, Federal Emergency Management, 44 FR 43239, July 24, 1979.*
- EO 11990, Protection of Wetlands, May 24, 1977.*
- Nev. Admin. Code, 444.750 to 444.840, Solid Waste Disposal*

Nev. Admin. Code, 445A.228 to 445A.263, Discharge Permits.

Nev. Admin. Code, 445A.283 and 445A.292, Treatment Works.

Babbitt, Harold E. and E. Robert Bauman, Sewerage and Sewage Treatment, John Wiley & Sons, New York, NY, 1952, p. 470.

International Association of Plumbing and Mechanical Officials, 20th edition, Uniform Plumbing Code (1994 Ed.) .

7 SOLID WASTE AND HAZARDOUS MATERIALS MANAGEMENT

7.1 RESOURCE CONSERVATION AND RECOVERY ACT OF 1976

REGULATORY SUMMARY

The Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments Act of 1984 (HSWA), which completely replaced the language of the earlier Solid Waste Disposal Act, constitute the statutory basis for the regulation of solid waste, hazardous waste, and underground storage tanks. The goals of this large, complex environmental law are as follows:

- Protect human health and the environment.
- Conserve material and energy resources through waste recycling and recovery.
- Reduce or eliminate the generation of hazardous waste.
- Minimize the threat posed to groundwater by storage of materials in underground tanks.

To achieve these goals, three interrelated programs were developed under RCRA. The first program, derived mainly from the Solid Waste Disposal Act and outlined under Subtitle D of RCRA, encourages states to develop comprehensive plans for the management of nonhazardous solid wastes, e.g., household waste. The second program, outlined under Subtitle C of the Act, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal. The last, under Subtitle I, authorizes the regulation of certain underground storage tanks (USTs) used for the storage of petroleum products and those hazardous substances listed in 40 CFR 302.4.

It is important to note that, although RCRA creates a framework for the proper management of hazardous and nonhazardous solid waste, it does not directly address the problems of hazardous waste encountered at inactive or abandoned sites or of those resulting from spills that require emergency response. Such problems are covered by a different federal statute, the Comprehensive Environmental Response,

Compensation, and Liability Act, also known as "Superfund" (see subchapter 7.3).

SOLID WASTE MANAGEMENT

Waste is defined as a material that is "sometimes discarded." A solid waste includes "solid, liquid, semisolid, or contained gaseous material." Solid waste that is not classified as hazardous waste is subject to regulation under Subtitle D of RCRA. The federal guidelines governing such solid wastes are found in 40 CFR 240, 243, 246, 257, and 258. States have the primary jurisdiction over the management of nonhazardous solid wastes. The regulation of nonhazardous solid waste is discussed in more detail in subchapter 7.1.1 of this handbook.

HAZARDOUS WASTE IDENTIFICATION

Hazardous waste is subject to Subtitle C of RCRA, and the regulations for hazardous waste are found in 40 CFR 260 through 279. Before a material can be a RCRA-hazardous waste, it must be a solid waste as defined above. A solid waste is hazardous if it (1) is declared hazardous by the generator; (2) has the characteristic for being ignitable, corrosive, reactive, or toxic; (3) is listed by the EPA; or (4) is a mixture of a hazardous waste and a solid waste.

Under 40 CFR 262.11(c)(2), a generator may apply knowledge of the hazard characteristic of the waste, rather than use test results, and thereby **declare** the waste hazardous (even if it is not).

Hazardous characteristics are described in Part 261, Subpart C. A solid waste exhibits the characteristic of **ignitability** if it is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F); if it is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard; if it is an ignitable compressed gas; or if it is an oxidizer as defined in 49 CFR 173.151. A solid waste that exhibits

the characteristic of ignitability has the EPA Hazardous Waste Number of D001.

A solid waste exhibits the characteristic of **corrosivity** if it is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5; or if it is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F). A solid waste that exhibits the characteristic of corrosivity has the EPA Hazardous Waste Number of D002.

A solid waste exhibits the characteristic of **reactivity** if it has any of the following properties:

- (1) It is normally unstable and readily undergoes violent change without detonating.
- (2) It reacts violently with water.
- (3) It forms potentially explosive mixtures with water.
- (4) When mixed with water, it generates toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment.
- (5) It is a cyanide- or sulfide-bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.
- (6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
- (7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
- (8) It is a forbidden explosive as defined in 49 CFR 261, or a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.88.

A solid waste that exhibits the characteristic of reactivity has the EPA Hazardous Waste Number of D003.

A solid waste exhibits the characteristic of **toxicity** if, using the Toxicity Characteristic Leaching Procedure, the extract from a representative sample of the waste contains any of the contaminants listed in Table 1 of 40 CFR 261.24 at the concentration equal to or greater than the respective value given in that table. A solid waste that exhibits the characteristic of toxicity has the EPA Hazardous Waste Number specified in Table 1 which corresponds to the toxic contaminant causing it to be hazardous (D004 through D043).

Listed wastes are found in Part 261, Subpart D, and carry the following system of identification:

- **F-Wastes** are from non-specific sources and primarily include spent solvents, heavy metals and cyanide, dioxin, wood preservatives, petroleum refining sludges, and multi-source leachates.
- **K-Wastes** originate from specific processes and are identified according to the industry that generates them.
- **P-Wastes** are commercial chemical products that are acutely toxic. These are regulated when produced at a rate of 1 kg/month or more.
- **U-Wastes** are commercial chemical products that are toxic. These are regulated when produced at a rate of 100 kg/month or more.

If the waste is a **mixture** of a listed hazardous waste (in any amount) with a solid waste, the mixture is a hazardous waste bearing the waste code associated with the listed portion of the mixture. If the waste is a mixture of a waste exhibiting a hazardous characteristic (or a listed waste for which the only basis for listing is that it exhibits a characteristic) with a solid waste, and the mixture no longer exhibits the characteristic, the mixture is not hazardous.

Provisions for delisting a listed waste can be found at 40 CFR 260 Subpart C. A petitioner must show that the waste in question does not exhibit the relevant characteristic for which it was listed or any of the characteristics of ignitability, corrosivity, reactivity or toxicity.

REGULATORY AUTHORITY

Under Section 3006 of RCRA, EPA may authorize states to administer and enforce hazardous waste regulations. The state of Nevada has received such authorization, and the Nevada Division of Environmental Protection administers the program in Nevada. States with authorized programs must be as stringent as the federal program. Nevada Administrative Code 444.8632 adopts by reference the federal regulations for hazardous wastes and used oil as they were on July 1, 1995 (40 CFR 260 - 270, and 279), with certain exceptions and revisions (NAC 444.86325, .8633, and .8634). The EPA retains

authority to conduct joint inspections and to jointly enforce RCRA's provisions.

The federal regulatory requirements for hazardous waste management programs are found in the following sets of regulations:

- 40 CFR 261 Identification and Listing of Hazardous Waste
- 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 266 Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities
- 40 CFR 268 Land Disposal Restrictions
- 40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Management Program
- 40 CFR 273 Standards for Universal Waste Management
- 40 CFR 279 Standards for the Management of Used Oil

Also see 49 CFR Subchapter C, "Hazardous Materials Regulations" (U.S. Department of Transportation) and Subchapter 7.2 of this handbook.

APPLICABILITY

Any activity at a DOE/NV site that generates or manages hazardous waste is regulated under the provisions of RCRA. Generators of less than 100 kilograms of hazardous waste per month and who meet certain conditions of waste treatment, storage, and disposal do not need a RCRA permit. However, the DOE/NV, as it conducts activities on the NTS, is considered a large-quantity generator, generating over 1000 kilograms of hazardous waste per month. The DOE/NV coordinates all of its hazardous waste generation, storage, treatment, and disposal activities in accordance with permits granted by, and other agreements with, the state of Nevada.

Hazardous waste is collected and temporarily stored at the Hazardous Waste Storage Unit in Area 5 under NTS hazardous Waste Management Permit number NEVHW009, issued May 1, 1995, before off-site disposal at a permitted commercial disposal unit. Explosive wastes are managed under the same permit, being treated and disposed of at the Explosive Ordnance Disposal Unit in Area 11.

Mixed waste (mixed RCRA-hazardous and low-level radioactive waste) generated at the Nevada Test Site is managed through compliance with the *Nevada Test Site Treatment Plan and Federal Facility Compliance Act Consent Order* (and its annual updates) signed by the DOE and the state of Nevada. Currently (January 1998), mixed waste generated at the NTS is stored under a *Site Treatment Plan* at facilities (on the Transuranic Waste Storage Pad) in Area 5. Any "newly generated" mixed waste will be handled under a *Mutual Consent Agreement* with the state of Nevada. Previously-generated mixed waste has been disposed of in Pit 3, a RCRA Interim Status waste management facility in Area 5.

DOE/NV operations not on the NTS may be subject to RCRA permitting if more than 100 kilograms of waste are generated per month. A generator is a conditionally exempt small-quantity generator in a calendar month if he generates no more than 100 kilograms of hazardous waste or a total of one kilogram of acute hazardous waste in that month. A conditionally exempt small-quantity generator may either treat or dispose of his hazardous waste in an on-site facility or ensure delivery to a permitted off-site treatment, storage, or disposal facility. Clark County does not have authority to administer hazardous waste laws; therefore, DOE/NV operations based in Clark County are reported to the NDEP and to the EPA.

PROCESS FOR COMPLIANCE

If a person treats, stores, or disposes of hazardous waste, or if hazardous waste is generated by an activity, the operation must be in compliance with RCRA. Treatment, storage, or disposal (TSD) facilities are subject to RCRA permitting. The Federal Facilities Compliance Act of 1992 (FFCA) amends the Solid Waste Disposal Act, which was previously amended by the Resource Conservation and Recovery Act (RCRA). In general, the FFCA waives sovereign immunity and subjects the Department of Energy (DOE) to the

imposition of fines and penalties for violations of RCRA or state hazardous waste requirements.

The Federal Facilities Compliance Act of 1992 allows the U.S. Environmental Protection Agency (EPA), EPA-authorized states, and courts to impose on DOE facilities the full range of punitive sanctions available under RCRA or state and local hazardous and solid waste laws. The FFCA amends RCRA's federal facilities provision to include an express waiver of immunity from punitive penalties, and making federal facilities subject to the same sanctions as any other polluter.

The major thrust of recent RCRA interpretation is to protect human health and the environment from improper handling of solid waste and to encourage conservation of natural resources. Executive Order 12873 of 1993, amended by Executive Order 12995 of 1996, encourages federal agencies in their acquisition and planning to consider use of more recycled materials, use of environmentally preferable products, and to practice waste prevention.

TSD facility owners or operators must submit permit applications, and they are required to meet certain standards to guarantee that their facilities operate safely. The standards include testing, containing, and destroying wastes to prevent the contamination of groundwater, surface water, or the atmosphere. Exemptions from RCRA permitting include the following:

- Accumulation areas for hazardous waste on-site storage for less than 90 days;
- Generation of less than 100 kg of hazardous waste in a calendar month and proper treatment, storage, or disposal of waste; and
- Transporters who store manifested waste shipments for 10 days or less in U.S. Department of Transportation-approved containers.

In addition, RCRA regulations specify safety and emergency measures to be followed if hazardous waste is discharged accidentally. Training programs to educate employees on what to do in case of emergency, on record keeping, and about EPA reporting requirements are also specified. New employees must be trained within six months of hire. In addition, an annual training program refresher course must be

provided. A more detailed description of the health and safety requirements can be found in subchapter 8.1 of this handbook.

INFORMATION AND REPORTING REQUIREMENTS

A fire, explosion, or other release of hazardous waste, or spill to surface water must be reported to the National Response Center at (800) 424-8802 and to the State Emergency Management Division at (702) 687-4202 or (702) 687-5300.

To provide accountability, hazardous wastes must be tracked from the time they are generated until they are disposed of. Records are required for transportation, storage at a site for more than 90 days, and disposal of the wastes. Copies of outgoing manifests, copies of returned, signed-off manifests, test results, and reports must be kept for three years. A Biennial Report must be submitted to the NDEP not later than March 1 for the preceding odd-numbered year.

The regulatory requirements for hazardous waste generators include the following:

- Determining whether any of the solid waste is hazardous;
- Obtaining an EPA identification number;
- Training certain workers in the proper handling of hazardous wastes;
- Properly packaging, labeling, and marking hazardous wastes;
- Manifesting hazardous waste shipments;
- Having waste transported, treated, stored, or disposed of only by persons who have an EPA identification number; and
- Reporting and maintaining records.

The generator must prepare the uniform hazardous waste manifest and adhere to the following requirements:

- The manifest must accompany the waste at all times, from point of generation to point of disposal;

- The generator must specify the name and EPA identification number of all parties authorized to transport, store, or dispose of waste;
- The generator must package waste for shipping according to DOE, EPA, and Department of Transportation (DOT) regulations;
- Handlers must receive signed copies of manifests;
- A person who receives waste without a completed manifest must file an exception report within 45 days; and
- Generators must certify on the manifest that they have adopted a waste minimization program.

Transporters are defined as persons engaged in off-site transportation of hazardous waste by air, rail, highway, or water:

- The standards jointly developed by the EPA and DOT apply to transporters (49 CFR Subchapter C);
- Transporters are subject to enforcement by federal, tribal, state, and local transportation agencies;
- Transporters must obtain an EPA identification number (40 CFR 263.11);
- Transporters must comply with the manifest system requirements and keep records for three years (40 CFR 262.40); and
- Transporters are responsible for cleanup in event of a spill (40 CFR 263.31).

Facility means all contiguous land and structures, other appurtenances, and improvements. A facility will be regulated as a treatment facility if:

- The operator handles hazardous waste; and
- The operator uses any method or process to change the physical, chemical, or biological character or composition in order to neutralize waste, recover energy or material from waste, render waste non-hazardous or less hazardous, and make waste amenable for recovery, storage, or to reduce volume.

Storage and disposal facilities are defined as follows:

- A storage facility engages in temporarily holding hazardous wastes until the wastes are treated, disposed of, or removed for storage elsewhere;
- A disposal facility is defined as a facility where hazardous waste is intentionally placed, and will remain after closure.

PERMITTING

RCRA requires that every owner or operator of a TSD facility obtain a permit. Facilities were granted interim status to continue operating without a final RCRA permit if:

- They were in existence before November 19, 1980;
- They notified the EPA of their hazardous waste management activities; and
- They filed a preliminary (Part A) permit application.

All land-based interim status facilities (i.e., surface impoundments, land fills, and land treatment facilities) must now be in compliance with the groundwater monitoring requirements. The facility's groundwater monitoring program must be designed to determine the impact of the facility on the groundwater quality of the uppermost aquifer underlying the facility, whether or not the aquifer is a source of drinking water.

Groundwater monitoring must continue through the active life of the facility and through the 30-year postclosure period. At least one well must be placed upgradient of the facility to determine the background groundwater quality, and at least two wells must be placed downgradient of the facility to determine the impact of the facility on groundwater (40 CFR Part 265, Subpart F).

General conditions of all RCRA permits will include the following duty to:

- Reapply before the permit expires (permits are valid up to 10 years);
- Suspend activities if necessary to ensure compliance;

- Take all reasonable steps to minimize releases and prevent adverse effects on human health and environment;
- Properly maintain all facilities and equipment;
- Provide requested information;
- Allow entry for and coordination of inspections;
- Maintain monitoring and records;
- Comply with all reporting requirements; and
- Provide advance notice of any planned changes in permitted activities.

Specific design, operating, and closure standards have been developed for ten different types of RCRA TSD facilities (40 CFR 264 and 265):

- Containers (Subpart I)
- Tanks (Subpart J)
- Surface Impoundments (Subpart K)
- Waste Piles (Subpart L)
- Land Treatment Units (Subpart M)
- Landfills (Subpart N)
- Incinerators (Subpart O)
- Thermal Treatment Units (Subpart P)¹
- Chemical, Physical, and Biological Treatment Units (Subpart Q)¹
- Underground Injection Wells (Subpart R)¹

The EPA has also established standards for "miscellaneous units" (Subpart X) to fill gaps. Subpart X covers technologies not covered by other standards. A miscellaneous unit is a unit that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator boiler, industrial furnace, underground injection well, containment building,

corrective action management unit, or research and development demonstration unit.

There are also general and facility-specific requirements for closure of TSD facilities (40 CFR 264 and 265, Subpart G and H): "Closure" is the period after which wastes are no longer accepted and TSD operations are completed. Performance standards include the following:

- Minimize need for further maintenance;
- Control, minimize, or eliminate escape; and
- Comply with specific standards for each facility type.

Operators must have detailed closure plans and schedules approved by EPA or the state. Post-closure monitoring and maintenance must be performed for a 30-year period.

To receive a final permit for approved operation, all interim status facilities must take corrective action for releases of hazardous waste or hazardous waste constituents from any solid waste management unit on the property. If corrective action cannot be completed before a permit is received, the EPA may put a compliance schedule into the permit to develop or complete corrective action. Owners and operators must prove that they have the financial resources to complete corrective actions.

All Land Disposal Units

Land-disposal unit permits shall be effective for a fixed term not to exceed 10 years and shall be reviewed every five years and modified as needed. Any such modification must consider improvements in the state of control and measurement technology and changes in the regulations that apply to the facility.

New and Expanded Landfills and Surface Impoundments--

RCRA permits for new and expanded landfills and surface impoundments will require groundwater monitoring and the installation of two or more liners with leachate collection above or between liners. New surface impoundments and landfills can obtain a waiver from the double-liner requirement if alternative design and operating practices, along with location characteristics, are shown to be as effective as double

¹Interim status only (40 CFR 265).

liners in preventing migration of hazardous constituents to aquifers.

Landfills

A facility operator cannot dispose of bulk or non-containerized liquid hazardous waste or free liquids contained in hazardous waste (regardless of whether adsorbents have been added) in a landfill, nor can the operator dispose of any nonhazardous liquid wastes in a landfill. A waiver of this prohibition may be obtained under certain conditions.

Waste Piles

Interim status waste piles that place waste into new units or lateral expansions or replacements of existing units must meet current Part 264 standards for liners and leachate collection systems.

LAND DISPOSAL RESTRICTIONS

The 1984 amendments to RCRA mandated strict new land disposal restrictions (LDR). Over a ten-year period, EPA promulgated LDR regulations in three phases which are codified in 40 CFR Part 148 (for injection wells) and Part 268 (for all other types of land disposal). The LDR Program applies to virtually all characteristic and RCRA-listed hazardous wastes. EPA must identify a Best Demonstrated Available Technology to treat each hazardous waste and an effective date for the LDR treatment standards.

The land disposal regulations affect generators, recyclers, and operators of treatment, storage, and disposal facilities. The general compliance strategy is contained in the following six steps; (see Elsevier's "RCRA Land Disposal Restrictions: A Guide to Compliance" or 40 CFR Part 268 for details):

1. Determine if the waste is hazardous.
2. Determine the appropriate hazardous waste codes.
3. Determine if the waste is wastewater or nonwaste water.
4. Look up the LDR treatment standards that apply.

5. Determine if the waste meets the treatment standards. If not, treat the waste to meet LDR standards.

6. Prepare and retain all paperwork required.

USED OIL MANAGEMENT

Used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities in concentrations greater than those listed in 40 CFR 279.11. Used oil containing more than 1,000 ppm total halogens is presumed to be a hazardous waste because it has been mixed with halogenated hazardous waste listed in Subpart D of 40 CFR 261. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste (for example, by using an analytical method from SW-846, Edition III, to show that the used oil does not contain significant concentrations of listed halogenated hazardous constituents). Used oil is to be recycled or burned for energy recovery.

A mixture of used oil and any listed hazardous waste is hazardous waste. A mixture of used oil and a characteristic waste that still exhibits the hazardous characteristic is hazardous waste. Oil that is disposed of and derivatives from oil that are disposed of are solid wastes and are not used oil.

Used oil shall not be managed in surface impoundments or waste piles unless the units qualify as hazardous waste disposal units subject to 40 CFR Part 264 or 265. Used oil may not be used as a dust suppressant.

Generators of used oil may operate a used oil aggregation point which may accept used oil or store used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, in quantities not to exceed 55 gallons per shipment. Generators are subject to applicable Spill Prevention, Control and Countermeasures (40 CFR 112) and Underground Storage Tank standards (40 CFR 280) if an underground storage tank is used. Containers and aboveground tanks and fill pipes to underground tanks must be labeled with the words, "Used Oil."

Generators of used oil who ship used oil off site must ensure that only transporters are used who have an EPA identification number.

UNDERGROUND STORAGE TANK MANAGEMENT

RCRA applies to storage of useful materials as well as wastes. Under Subtitle I, RCRA regulates underground storage of "regulated substances," (i.e., all petroleum products, including gasoline and crude oil, and any substance defined as hazardous by CERCLA, but not RCRA-listed hazardous wastes). An "underground storage tank" is defined as any tank with at least 10 percent of its volume buried below ground, including any attached pipes. Aboveground tanks with extensive underground piping may now be regulated under RCRA. The federal regulations are found at 40 CFR 280.

The state of Nevada has adopted the federal regulations for USTs in NAC 459.993 and has delegated responsibility for governing storage tanks in Clark County to the Clark County Health District. The state UST program includes a UST Fund to help mitigate petroleum discharges. Nevada requires owners and operators to register their storage tanks and pay an annual \$100 registration fee on or before October 1 of each year. Registrants are covered under the UST Fund so long as their fees are kept current. The state has not established a permit system for storage tanks, but owners must notify NDEP within 30 days of the existence of a new tank and of any tank removed since January 1, 1974. The owner must notify NDEP prior to any permanent storage tank closure or removal and follow the requirements of 40 CFR 280, Subpart G.

In general, the UST regulations prohibit any person from installing an underground storage tank for the purpose of storing a regulated substance unless such tank system:

- Will prevent failures due to corrosion or structural failure for the life of the tank;
- Is cathodically protected against corrosion, is constructed of non-corrosive materials, and is designed in a manner to prevent release of any stored material; and
- The material of construction is compatible with the substance stored.

The general areas of the UST regulation under 40 CFR 280 include:

- Design and installation of new tanks;

- Upgrading of existing tanks;
- Operating requirements;
- Release detection;
- Investigation of releases;
- Corrective action;
- Tank closure;
- Financial responsibility.

EPA's UST program does not apply to:

- Tanks holding a hazardous waste regulated under RCRA hazardous waste program (Subtitle C);
- Farm or residential tanks of 1,100 gallons or less used for storing motor fuel for noncommercial purposes;
- On-site heating oil tanks;
- Septic tanks;
- Pipelines regulated under other laws;
- Surface impoundment, pit, or lagoon;
- Systems for collection of storm and wastewater;
- Flow-through process tanks;
- Liquid traps or associated gathering lines related to oil and natural gas operations;
- Storage tanks situated in an underground area such as a basement or tunnel if mounted on the floor;
- UST systems of 110 gallons or less;
- Equipment that contains a regulated substance such as a hydraulic lift tank; and
- UST systems for emergency spill or overflow control.

The UST program bans the installation of corrodible tanks, initiates a notification program, sets technical standards for all tanks, coordinates federal and state efforts, and provides mechanisms for regulatory inspections and enforcement. New underground storage tanks must be adequately protected from corrosion and the liners must be compatible with the contents.

Subtitle I of RCRA also mandates a state and local notification program that applies to distributors of regulated substances, to owners of tanks taken out of operation within the past 16 years but still in the ground, and to owners of operational tanks.

Under these RCRA provisions, EPA has developed performance standards for new tanks, as well as standards covering leak detection, leak prevention, and corrective action for both new and existing underground storage tanks.

Upgrading of Existing Tanks

By December 22, 1998, all existing UST systems must comply with either the new performance standards of 40 CFR 280.20, the upgrading requirements of 40 CFR 280.21, or the closure requirements of 40 CFR 280, Subpart F.

The method of release detection used must be able to detect the specified leakage rate with a probability of 95 percent and a probability of a false alarm of 5 percent (40 CFR 280.40). If the tank is not retrofitted with an approved release detection by the dates indicated above, the UST must be closed.

The law specifies that leak detection/prevention and corrective action regulations require owners/operators of USTs to detect and correct releases, to keep records of releases, and to provide for proper closure.

Three methods of upgrading existing tanks are provided in the regulations:

- Interior lining;
- Cathodic protection; and
- Cathodic protection with interior lining.

If the tank is upgraded using interior lining only, the tank must be inspected after 10 years, and every 5 years thereafter.

If the tank is upgraded using corrosion protection only, the owner is required to ensure that the tank is not leaking before installing the cathodic protection. Three methods for ensuring the tank is not leaking include:

- Internal inspection;
- Monthly leak monitoring for tanks installed within the last ten years; and

- Tank tightness testing before the installation and another test three to six months after installation.

If the tank is upgraded using a combination of cathodic protection with internal lining, the tank must meet new tank performance standards except for dielectric coating of the tank and piping.

Spill and Overfill Prevention

To prevent spilling and overfilling associated with product transfer, existing tanks must be retrofitted with spill and overfill controls by December 22, 1998. The spill and overfill prevention equipment that may be used includes:

- Spill prevention equipment that will prevent release of product when the transfer hose is detached from the fill pipe.
- Overfill prevention equipment that will automatically shut off flow into the tank when it is no more than 95 percent full or alert the operator by restricting the flow into the tank when the tank is no more than 90 percent full.

Federal and state personnel are authorized to request pertinent information from tank owners; inspect and sample tanks; and monitor and test tanks and surrounding soils, air, surface water, and groundwater. The regulators may issue compliance orders for any violation of statutes or regulations. Offenders of these civil penalties are subject to a maximum fine of \$5,000 per tank for each day of violation, plus the cost of actual damages.

DOE/NV CONTACTS

For wastes generated at the NTS and for hazardous materials used or stored there, DOE/NV has established the tracking systems and developed the necessary records and reports. If a DOE/NV facility user anticipates the use of any hazardous materials or the generation of any wastes that are considered hazardous under RCRA, DOE/NV must be contacted before the transportation of these materials to the NTS or the start-up of any processes that may result in the generation of any hazardous wastes. The user must demonstrate to DOE/NV, through formal documentation, that all proposed activities will be in full compliance with RCRA and that existing programs and procedures will be complied with.

Non-government and corporate tenants are not covered under DOE/NV permits and must apply directly to the state for permits applicable to their own activities.

The DOE/NV point of contact for RCRA compliance information is the Director, Environment, Safety & Health Division, at (702) 295-1433. The DOE/NV point of contact for waste minimization and pollution prevention is the Director, Engineering and Asset Management Division, at (702) 295-3424.

REFERENCES

Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.

Used Oil Recycling Act of 1980, Pub.L. 96-463, Oct. 15, 1980.

Federal Facilities Compliance Act of 1992, Pub. L. No. 102-386, 106 Stat. 1505.

40 CFR Part 148, Hazardous Waste Injection Restrictions

40 CFR 238-282, Subchapter I—Solid Wastes (continued).

40 CFR 302.4, Designation of Hazardous Substances.

49 CFR Subchapter C (Parts 171 to 180), Hazardous Materials Regulations.

Nev. Admin. Code Chapter 444, Sanitation (1996).

Nev. Admin. Code 459.800 - .950, Disposal of Radioactive Material.

Elsevier Science Inc., The Hazardous Waste Consultant: RCRA Land Disposal Restrictions: A Guide to Compliance (1996).

Executive Order 12873, Federal Acquisition Recycling, and Waste Prevention, October 20, 1993 (amended by Executive Order 12995, March 25, 1996).

U.S. DOE, Nevada Test Site Treatment Plan and Federal Facility Compliance Act Consent Order (March 1996).

EPA Guidance Documents:

EPA #SW-968, Permit Applicants' Guidance Manual for the General Facility Standards.

EPA #SW-912, Closure and Post-Closure Interim Status Standards (Subpart G).

EPA #SW-913, Financial Requirements - Costs Estimates: Interim Status Standards (Subpart H).

EPA #SW-955, Financial Assurance for Closure and Post-Closure Care: A Guidance Manual.

EPA #SW-961, Liability Coverage: A Guidance Manual (Subpart H).

EPA #055-000-00244 4, Waste Analysis Plan Guidance Manual.

EPA #SW-846, Test Methods for Evaluation of Solid Waste, 2nd Edition.

EPA-600/2-84-057, Design and Development of Hazardous Waste Reactivity Testing Protocol.

EPA/530-SW-85-003, Petitions to Delist Hazardous Waste: A Guidance Manual.

EPA/530-SW-84-006, Interim National Criteria for a Quality Hazardous Waste Management Program under RCRA.

EPA/530-SW-84-004, Permit Applicants' Guidance Manual for Hazardous Waste Land Treatment, Storage, and Disposal Facilities.

EPA #SW-871, Management of Hazardous Waste Leachate.

EPA #SW-872, Guide to the Disposal of Chemically Stabilized and Solidified Waste.

EPA #SW-873, Closure of Hazardous Waste Surface Impoundments.

EPA #SW-874, Hazardous Waste Land Treatment.

7.1.1 NONHAZARDOUS SOLID WASTE MANAGEMENT

REGULATORY SUMMARY

Subtitle D of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, provides the framework and authority for state or regional solid waste plans. The Act sets forth the requirements for approval of plans, the criteria for sanitary landfills, and prohibition against open dumps. The U.S. Environmental Protection Agency has promulgated regulations to implement Subtitle D in 40 CFR, Subchapter I, "Solid Wastes;" namely in the following sections:

- 40 CFR 256 Guidelines for development and implementation of solid waste management plans
- 40 CFR 257 Criteria for classification of solid waste facilities and practices
- 40 CFR 258 Criteria for municipal solid waste landfills (with appendices)
- Appendix I Constituents for detection
- Appendix II List of hazardous inorganic and organic constituents

The state of Nevada has codified its regulations for solid waste disposal in NAC 444.570 - .7499, and specifically adopts Appendix I and II (as they existed in November 8, 1993) and the definition of a municipal solid waste landfill unit (40 CFR 257.2) at NAC 444.591. In general, Nevada regulations adopt the federal criteria. By Nevada law, "solid waste" does not include hazardous waste. "Solid waste" means all putrescible and nonputrescible refuse in solid or semisolid form, including, but not limited to, garbage, rubbish, junk vehicles, ashes or incinerator residue, street refuse, dead animals, demolition waste, construction waste, solid or semisolid commercial, and industrial waste.

All solid wastes must be stored, collected, utilized, treated, processed, and disposed of by means that do not create a health hazard, public nuisance, or impairment of the environment. Solid wastes cannot be placed within four feet of the highest groundwater table or within any surface water body or groundwater.

Regulations prohibit the open burning of any material at the solid waste disposal facility at the NTS.

A person shall not operate or authorize the operation of a disposal site unless the operator holds a permit to operate the disposal site issued by the solid waste management authority and complies with the terms and conditions of the permit. A permit for the construction or operation of a municipal solid waste landfill is subject to the general conditions of the Resource Conservation and Recovery Act of 1976, Subtitle D, 42 U.S.C. §§6941 et seq., and the regulations adopted pursuant thereto.

A "municipal solid waste landfill unit" means a discrete area of land or an excavation that receives household waste. A municipal solid waste landfill unit may receive other types of solid waste, including sludge and industrial solid waste. A municipal solid waste landfill unit may be publicly or privately owned. The term does not include an injection well, a surface impoundment, a land application unit, or a waste pile. A "new municipal solid waste landfill unit" means a municipal solid waste landfill unit which has not received waste before November 8, 1993.

A "Class I site" means a disposal site which comprises at least one municipal solid waste landfill unit including all contiguous land and structures, other appurtenances and improvements on the land used for the disposal of solid waste, and is not a Class II or Class III site. The location of a Class I site must meet with the approval of the solid waste management authority and comply with the requirements set forth in NAC 444.6765 and 444.6783 to 444.6795, inclusive. Unless approved by the solid waste management authority, a Class I site may not be within 1,000 feet of any surface water or 100 feet of the uppermost aquifer if the site is approved after September 2, 1992.

A "Class II site" means a disposal site which comprises at least one municipal solid waste landfill unit which accepts less than 20 tons of solid waste per day on an annual average; for which there is no evidence of contamination of ground water originating from the site; which serves a community that has no other practicable alternatives for waste management; and which is located in an area which annually receives no more than 25 inches of precipitation. The term includes all contiguous land and structures and other appurtenances and improvements on the land used for the disposal of solid waste.

A "Class III site" means a disposal site which accepts only industrial solid waste.

All solid wastes must be stored, collected, utilized, treated, processed and disposed of by means that do not create a health hazard, public nuisance, or impairment of the environment. They must be handled in such a manner which does not contribute to breeding of insects and rodents or to support any disease vector. All solid waste systems must be operated in a manner that will not cause or contribute to pollution of the atmosphere or surface or ground waters of the state. No system for solid waste handling, processing, salvage, or disposal may be placed in operation unless approved by the solid waste management authority.

The disposal of *special wastes* is regulated according to NAC 444.646 through 444.656:

- Sewage sludges, septic tank pumpings, and medical wastes may be deposited at a disposal site only if provisions for such disposal are included in the operational plan and approved by the solid waste management authority. A completed special waste burial area must be covered with a layer of suitable cover material compacted to a minimum uniform depth of 36 inches.
- Large quantities of waste oils, greases, oil sludges, or oil soaked wastes must not be placed in any land disposal site unless special provisions for handling and other special precautions are included in the operational plan to prevent fires and pollution of surface or ground waters. Provisions for handling and disposing of large quantities of waste oils are effective only if approved by the solid waste management authority.
- Landfills incorporating large quantities of construction and demolition wastes of combustible nature must be cross-sectioned into cells by compacted cover material to prevent spread of accidental fires.

APPLICABILITY

Nevada solid waste regulations are applicable to activities that involve the generation, treatment, storage, or disposal of solid wastes from any source. Hazardous wastes and radiological wastes are not covered by these regulations.

The DOE/NV operates three disposal sites on the NTS for nonhazardous solid waste. A Class II disposal site is located in Area 23 and receives the "municipal" garbage collected from Mercury and other locations on the test site. DOE/NV provides garbage collection services for tenants of the test site. Tenants are responsible for the safe and sanitary storage of all solid waste accumulated at the premise until it is removed. All garbage and similar putrescible waste must be stored in durable, nonabsorbent, watertight, and easily cleanable containers that are resistant to corrosion and rodents. The covers of such containers must prevent the entry of flies. The size and allowable weight of the container is determined by the collection agency, subject to the approval of the solid waste management authority (See "Process for Compliance" below).

A test subsidence crater, 10C, in Area 9, historically used as a Class II disposal site, was covered with a top layer of soil and closed. It recently has been reopened as a Class III site. Another Class III site is located in Area 6 for the disposal of hydrocarbons under permit number SW1309702, issued on May 20, 1997.

PROCESS FOR COMPLIANCE

Nevada solid waste regulations are enforced by the Nevada Division of Environmental Protection - Solid Waste Disposal, within the Department of Conservation and Natural Resources. No system for solid waste handling, processing, salvage, or disposal may be operated without a Nevada Division of Environmental Protection - Solid Waste Disposal permit.

The owner or operator of a proposed disposal site shall obtain a permit before the construction or operation of that site. An application for a permit must be submitted at least 180 days before the anticipated start of construction to allow sufficient time for the review and issuance of the permit.

A disposal site for which a notice of intent to close the site by November 8, 1993, or continue operations after November 8, 1993, that has not been submitted to the solid waste management authority shall be deemed to be an open dump. Class I sites which are to continue operations after November 8, 1993, must have a permit issued by the solid waste management authority by October 9, 1996. Class II sites which are to continue operations after November 8, 1993, must have a permit issued by the solid waste management authority by October 9, 1999.

INFORMATION AND REPORTING REQUIREMENTS

After design approval, the facility must submit a solid waste management and disposal plan to the solid waste authority. Approval of the plan allows a permit for operation to be issued. Permits must be renewed on January 1 in alternate years.

DOE/NV CONTACTS

The principal point of contact for information concerning nonhazardous solid waste disposal is the Director, Environment, Safety & Health Division, at (702) 295-1433; or the Director Waste Management Division at (702) 295-0250.

REFERENCES

Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.

Pub.L. 98-616, Hazardous and Solid Waste Amendments Act of 1984.

40 CFR 256, Guidelines for Development and Implementation of Solid Waste Management Plans.

40 CFR 257, Criteria for Classification of Solid Waste Facilities and Practices.

40 CFR 258, Criteria for Municipal Solid Waste Landfills.

Nev. Admin. Code 444.570 to 444.7499, Disposal of Solid Waste.

7.1.2 UNDERGROUND INJECTION CONTROL

REGULATORY SUMMARY

The authority for the Underground Injection Control (UIC) program is derived from both the Safe Drinking Water Act and the Resource Conservation and Recovery Act, under which the EPA delegated to Nevada the primary responsibility to issue underground injection control permits in 1988. The purpose of the program is to ensure that underground injection will not endanger drinking water sources. The UIC program is administered in Nevada by the Nevada Division of

Environmental Protection. The Nevada UIC regulations are more restrictive than the federal regulations, and the state regulations prevail on public and federal lands in Nevada, but not on Indian lands.

Under the federal and state regulations, 40 CFR 144 - 148 and NAC 445A.810 - .925, respectively, injection wells include any dug hole or well deeper than its largest surface dimension whose principal function is the emplacement of fluids. These include any septic tank or cesspool used for disposal of hazardous waste or used for disposal of sanitary waste. The recent hazardous waste injection restrictions (40 CFR 148) prohibit the injection of RCRA hazardous waste.

Historically, injection wells are classified into five categories:

A **Class I** well is an injection well for the disposal of industrial, municipal, and radiological or high level radioactive waste whereby fluids are injected below the lowest formation containing, within one-quarter mile of the well bore, water with a concentration of total dissolved solids of 10,000 milligrams or less per liter and includes:

1. A well used for the injection of hazardous waste by a person who generates hazardous waste or an owner or operator of a facility for the management of hazardous waste; and
2. A well for the disposal of industrial waste and municipal sewage effluent.

A **Class II** well is an injection well for the production and storage of oil and gas and includes a well which injects fluids:

1. Which are brought to the surface in connection with the conventional production of oil or natural gas;
2. For enhanced recovery of oil or natural gas; and
3. For storage of hydrocarbons which are liquid at standard temperature and pressure.

A **Class III** well involves a special process which injects fluids for the extraction of minerals or energy, except geothermal energy, and includes:

1. Mining of sulfur by the Frasch process;

2. *In situ* production of uranium or other metals from bodies of ore which have not been conventionally mined;
3. Solution mining of salts or potash; and
4. *In situ* recovery of fossil fuel, which includes coal, tar sands, oil shale, and any other fossil fuel which can be mined by this process.

A **Class IV** well is an injection well which injects hazardous wastes into or above a formation containing, within one-quarter mile of the well bore, an underground source of drinking water or an aquifer which has been exempted pursuant to NAC 445A.850 to 445A.855, inclusive, and includes a well used by:

1. Persons who generate hazardous waste or radiological or high-level radioactive waste; and
2. An owner or operator of a facility for the management of hazardous waste or a site for the disposal of radioactive waste.

A **Class V** well is any injection well not included in Classes I, II, III and IV, and includes:

1. Wells used to inject the water for heating or cooling by a heat pump;
2. Cesspools or other devices receiving wastes which have an open bottom and sometimes have perforated sides;
3. Wells used to inject water previously used for cooling;
4. Wells used to drain surface fluid, primarily the runoff from storms, into a subsurface formation;
5. Wells used for the injection of fluids accumulated from dewatering operations;
6. Dry wells used for the injection of wastes into a subsurface formation;
7. Wells used to replenish the water in an aquifer;
8. Wells used to inject water into an aquifer of fresh water to prevent the intrusion of water of a lower quality into the fresh water;
9. Wells used to inject a mixture of water and sand, mill tailings, or other solids into subsurface mines;

10. Wells used to inject the waste or effluent from a septic tank or cesspool;
11. Wells used to inject fluids into a zone, other than an oil or gas producing zone, to reduce or eliminate subsidence associated with the overdraft of fresh water;
12. Wells used for the storage of hydrocarbons in a gaseous state at standard temperature and pressure;
13. Geothermal wells used in heating, the production of energy, and aquaculture;
14. Wells used for solution mining of ores or minerals in conventional mines, such as stopes leaching;
15. Wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts; and
16. Injection wells used in experimental technologies.

However, by Nevada law, all Class I and Class IV injection wells are prohibited, which include the injection of radioactive waste. "Radioactive waste" means any waste which contains radioactive material in concentrations which exceed those listed in 10 CFR Part 20, Appendix B, Table II, Column 2. Cesspools and injection wells for septic systems are prohibited; injection wells for municipal sewage or effluent from a waste treatment plant are prohibited; and the injection of any hazardous wastes (defined at 40 CFR 261.3) through a well is prohibited.

All underground injection is prohibited except as authorized by permit.

APPLICABILITY

Any activity conducted at DOE/NV sites that involves the injection or disposal of waste fluids into a well or dug hole, as defined by the regulations, will require a UIC permit.

PROCESS FOR COMPLIANCE

The operator of a well, not the owner, must apply for a UIC permit, and the NDEP must issue the permit before construction can begin. An injection well operator may not begin or resume injection until the NDEP issues a permit and authorizes the operator to initiate injection.

A public notice for a draft permit will be circulated by the NDEP at least 30 days before issuance of the permit. Any interested person can request a public hearing. A notice of a hearing must be posted at least 30 days before the scheduled date of the hearing. Additional comment time may be granted by the NDEP. The permit must be granted or denied within 30 days after the end of any public comment period. A permit for Class V wells shall be effective for a fixed term not to exceed five years. Area permits may be issued for groups of similar wells. Applications are submitted on a form provided by the NDEP and are signed by the operator of the well.

Application for renewal of a permit must be submitted 180 days before the expiration date of the permit.

The permit will specify the terms and conditions for construction, use, monitoring, abandonment and plugging, and reporting for the injection well. Types of noncompliance include the following:

1. Failure to complete construction elements by the dates specified in the permit.
2. Modifications to schedules because of noncompliance.
3. Failure to complete or provide a compliance schedule or monitoring reports within 30 days of due date.
4. Submitting a report so deficient as to cause misunderstanding and thus impede the status review by the NDEP.
5. Noncompliance with other permit requirements.

INFORMATION AND REPORTING REQUIREMENTS

If the holder of a permit does not comply, or will not be able to comply with conditions of the permit, the holder shall submit a report to the NDEP within five days after becoming aware of the inability to comply.

If the noncompliance threatens the quality of groundwater, the permit holder must notify the NDEP within 24 hours and follow up with a written report as above.

Reports of the results of monitoring, as required by the permit, must be submitted to the NDEP quarterly and retained for three years.

A well with casing is considered abandoned if its use has been discontinued for at least one year. Notification of abandonment must be made within 30 days before abandonment of the well. A borehole without casing is considered abandoned if drilling operations have ceased for 30 days. For new wells, notification must be made five days before abandonment of the well. The NDEP may order that abandoned wells be plugged. Reports of the nature and composition of all injected fluids must be retained for five years after plugging and abandonment.

DOE/NV CONTACTS

The principal contact for information on the UIC program is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Safe Drinking Water Act of 1974, as amended,
42 U.S.C. 300f et seq.

Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 et seq.

40 CFR 124, *Procedures for Decisionmaking.*

40 CFR 144, *Underground Injection Control Program.*

40 CFR 145, *State UIC Program Requirements.*

40 CFR 146, *Underground Injection Control Program: Criteria and Standards.*

40 CFR 147, *State Underground Injection Control Programs.*

40 CFR 148, *Hazardous Waste Injection Restrictions.*

Nev. Admin. Code 445A.810-445A.925, Underground Injection Control.

7.2 HAZARDOUS MATERIALS TRANSPORTATION ACT

REGULATORY SUMMARY

The Hazardous Materials Transportation Act (HMTA), enacted by PL 93-633, Jan. 3, 1975, was substantially revised by the Hazardous Materials Transportation Uniform Safety Act of 1990, PL 101-615, Nov. 16, 1990, and was recodified without substantive amendment by the "Revision of Title 49 U.S.C.," PL 103-272, July 5, 1994. Sec. 1(a) of the Act now states:

"Certain general and permanent laws of the United States, related to transportation, are revised, codified, and enacted by subsections (c)-(e) of this section without substantive change as subtitles II, III, and V-X of Title 49, United States Code, "Transportation". Those laws may be cited as "49 U.S.C. —."

The Hazardous Materials Transportation Act, as amended, was recodified in Title 49 as Chapter 51, "Transportation of Hazardous Material" and should be cited as the "Federal Hazardous Material Transportation Law," 49 U.S.C. 5101, *et seq.*

The Act gives the Secretary of Transportation broad authority to establish regulations applicable to all modes of transport. On December 21, 1990, the U.S. Department of Transportation published Docket HM-181 (55 FR 52402), which amended 49 CFR 107 and 171-179, the Hazardous Materials Regulations. HM-181, a DOT project initiated in 1982, simplifies previous regulations, revises outdated material, and makes the rules more compatible with international commerce by adopting the recommendations of the United Nations. HM-181 has been revised several times since 1990. DOT Hazardous Materials Regulations preempt state, tribal, and local regulations that are not substantively the same as the federal regulations.

One of the key features of the new regulations is the introduction of performance-oriented packaging standards (POPS); see 49 CFR Part 178, Subpart L. POPS replaces previous regulations which were based on industry packaging standards. For example, under the old system, the specifications for drums might specify the size, construction material, material thickness, coatings, and location and size of openings. Under POPS, packaging standards are based on the hazardous contents and their relation to package design

and compatibility with packaging materials. A package must meet certain performance criteria (49 CFR Part 178, Subpart L) such as remaining intact when dropped from a height of six feet if it contains a dangerous material with a specific gravity of 1.2 or less, or 2.6 feet if it contains a material posing minor danger. (Materials to be packaged are classified in 49 CFR 173, Subpart A as posing a great, medium, or minor danger.)

In addition to establishing POPS, some of the other major provisions of the new regulations include:

- Replacing 100 DOT packaging standards with 20 new United Nations (U.N.) performance-oriented standards;
- Requiring the use of a packaging group, vapor pressure, and chemical compatibility of packaging and hazardous materials as the basis for packaging requirements;
- Requiring performance tests and retests, such as vibration and drop tests, for all packaging manufactured to U.N. standards;
- Consolidating hazardous materials classifications into a single table;
- Replacing U.S. measurement units with standard international units;
- Requiring the use of U.N.-recommended hazard class names, descriptions, and definitions;
- Requiring a minimum thickness for reuse of metal and plastic drums; and
- Requiring manufacturers to notify customers about steps they must take for packaging to meet specifications.

The new hazardous materials regulations for packaging went into effect on October 1, 1991, but a transition period was allowed (49 CFR 171.14). On October 1, 1996, all provisions of the Hazardous Materials Regulations were in effect.

Packages that were already filled before October 1, 1991, and were not emptied and refilled, may be offered for transportation and transported prior to October 1, 2001. Placards conforming to specifications in effect on September 30, 1991, (old rules) may be used until October 1, 2001. Hazard

communication requirements should be consistent, (i.e., marking, labeling, placarding, and shipping paper descriptions should conform to either the old requirements or new requirements); however, intermixing is permitted during the applicable transition periods.

The DOT requires shippers and carriers to receive training on DOT hazardous materials regulations (49 CFR 172, Subpart H). Motor carriers are subject to the additional requirements set forth in the Federal Motor Carrier Safety Regulations (49 CFR 390-397).

Other regulations overlap certain provisions of the HMTA, particularly CERCLA storage, handling, and spill clean-up regulations. Personnel training requirements imposed by CERCLA, HMTA, and the Occupational Safety and Health Act (OSHA) fall into two categories. The first concerns regulatory compliance, operational safety, and accident prevention. The second is concerned with emergency response. These training requirements cover such topics as regulations, procedures, equipment, proper labeling, and record keeping. The DOT requires shippers, handlers, and carriers to obtain training on DOT's hazardous materials regulations.

All generators, shippers, and disposers of hazardous materials are required to document the shipment of materials from initial loading onto the vehicle to unloading the material at its final destination. Any change in shippers or change in vehicles between the origination and the destination must be documented (49 CFR 172.205).

All offerers of hazardous materials for transportation, and transporters of hazardous materials, are required to register with the DOT and pay a fee which is to help fund state and local emergency preparedness and response efforts for transportation-related hazardous material spills (49 CFR Part 107, Subpart G).

Every container used to ship hazardous wastes or materials must meet regulatory standards and be marked with the proper shipping name and identification number assigned to the material. For example, if the material represents an inhalation hazard, the package must be marked for that hazard. Markings must be durable and legible. They should not be obscured by other markings. For DOE shipments, the shipper's and/or receiver's name and address should be placed on each package. Vehicles used to ship

hazardous wastes or materials must exhibit the proper placards on each end and on both sides, indicating the general contents of the vehicle. See the section, "Process For Compliance," for specific regulations.

APPLICABILITY

The hazardous materials regulations and new performance-oriented packaging are applicable to activities involving the shipment of regulated hazardous materials and wastes onto, within, and off of DOE/NV sites.

PROCESS FOR COMPLIANCE

The following is a step-by-step process for properly describing, classifying, packaging, marking, and labeling waste materials being offered for transportation:

- Classify the material according to the definitions in 49 CFR Part 173, Subpart C through I. The classification scheme is very complex, and only the higher-ordered categories are listed here:

Class 1 (explosive):

- Division 1.1 (mass explosion hazard)
- Division 1.2 (projection hazard)
- Division 1.3 (fire hazard)
- Division 1.4 (minor explosion hazard)
- Division 1.5 (very insensitive explosives)
- Division 1.6 (extremely insensitive)

Class 2 (gas):

- Division 2.1 (flammable gas)
- Division 2.2 (non-flammable, nonpoisonous compressed gas)
- Division 2.3 (gas poisonous by inhalation)

Class 3 (flammable liquid)

Class 4:

- Division 4.1 (flammable solids)
- Division 4.2 (spontaneously combustible material)
- Division 4.3 (dangerous when wet material)

Class 5:

- Division 5.1 (oxidizer)
- Division 5.2 (organic peroxide)

Class 6:

- Division 6.1 (poisonous material)
- Division 6.2 (infectious substance)

Class 7 (radioactive)

Class 8 (corrosive material)

Class 9 (miscellaneous hazardous material)

- Select proper DOT shipping name from the Hazardous Materials Table (49 CFR 172.101).
- Identify any additional description requirements that may apply, e.g., either the name of the hazardous constituent or the EPA waste number (49 CFR 172.203).
- Package the material as required. Packing groups are found in the Hazardous Materials Table, 49 CFR 172.101, column 5; applicable CFR sections are in column 8.
- Apply the required DOT hazard warning label(s). Each package containing a hazardous material shall be labeled with primary and subsidiary hazard labels as specified in column 6. General label placement and specifications are found in 49 CFR 172, Subpart E.
- Mark the package as required; see 49 CFR Part 172, Subpart D, "Marking."
- Offer the hazardous materials for shipment and have placards available; see 49 CFR 172, Subpart F, "Placarding."

INFORMATION AND REPORTING REQUIREMENTS

In summary, the hazardous materials transportation regulations mandate the following requirements:

- Shipping document in the form of a Hazardous Waste Manifest (49 CFR 172.205).
- Specific labeling requirements for each material being transported must be met;
- Specific marking requirements include use of proper shipping names, identification numbers,

consignee name and address, marking style, color, size, and weight of the package or container, etc.;

- Vehicles and containers used to ship hazardous materials must be placarded; and
- Unpermitted or accidental discharges of hazardous materials during loading, unloading or transport must be reported.

EMERGENCY MANAGEMENT

All emergency management activities on the Nevada Test Site, including those involving transportation, are governed by DOE Order 151.1, "Comprehensive Emergency Management System." Shipments of chemicals in quantities exceeding thresholds listed in 29 CFR 1919.119, 40 CFR 68.130, and 40 CFR 355, and/or radioactive materials in 10 CFR 30.72 have the potential for a Hazardous Material Operational Emergency. Such an emergency must be further classified as an Alert, a Site-area Emergency, or a General Emergency, depending upon the area of potential or actual impact.

The hazards associated with shipments that transit the NTS will be identified in the DOE/NV Transportation Emergency Management Hazards Assessment and incorporated into the Transportation Emergency Management Plan, both to be updated at least annually.

The DOE/NV Emergency Management Division, in coordination with transportation project personnel, will advise off-site authorities, including the state of Nevada Division of Emergency Management and the Local Emergency Planning Committees, of the nature of the hazards involved with NTS transportation operations. Coordination with the Nevada Division of Emergency Management and the appropriate counties as required in DOE Order 151.1 will allow them to update their emergency plans and procedures for their respective Emergency Operations Centers.

DOE/NV CONTACTS

The points of contact for information on compliance with the Federal Hazardous Materials Transportation Law are the DOE/NV Transportation Manager at (702) 295-7444; and the Director, Emergency Management Division, at (702) 295-1299.

REFERENCES

- 49 U.S.C. 5101 - 5127, *Transportation of Hazardous Materials (Federal Hazardous Materials Transportation Law)*.
- 40 CFR 262, *Standards Applicable to Generators of Hazardous Waste; Subpart A, General; Subpart B, The Manifest; Subpart C, Transportation Requirements*
- 49 CFR Subchapter A (Parts 106 to 110), *Hazardous Materials Transportation and Pipeline Safety*.
- 49 CFR Subchapter B (Part 130), *Oil Transportation*.
- 49 CFR Subchapter C (Parts 171 to 180), *Hazardous Materials Regulations*.
- 49 CFR 390-397 *Federal Motor Carrier Safety Regulations*.
- DOE O. 151.1, *Comprehensive Emergency Management System (August 8, 1996)*.

7.3 COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980

REGULATORY SUMMARY

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and its implementing regulations cover all aspects of the identification, investigation, and remediation or "cleanup" of inactive or abandoned hazardous waste disposal sites, and for emergency response for hazardous substances released into the environment. CERCLA mandates that the EPA identify and prioritize such sites through the development of a National Priorities List (NPL) of sites appearing to pose the most serious threats to public health or the environment.

CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA) (Pub. L. No. 99-499, 1986), provided for a Superfund to be used by the EPA or state and local governments to clean up sites listed on the NPL. SARA also provided for new programs, especially its Title III, also known as the Emergency

Planning and the Community Right-to-Know Act (EPCRA). The amendments and EPCRA have greatly increased the role of private citizens in the implementation of CERCLA programs at individual release sites. Under Title III, states must develop emergency planning districts and identify local emergency response organizations that could respond to a hazardous release from a local facility. Facilities must notify these districts of materials maintained and of releases occurring from their sites. Facilities that manage Extremely Hazardous Substances, as defined in 40 CFR 355, Appendix A, in quantities exceeding Threshold Planning Quantities must comply with requirements for Material Safety Data Sheet (MSDS) submissions (Section 311) of Subtitle B reporting requirements, Emergency and Hazardous Chemical Inventory reporting (Section 312), and Toxic Chemical Release reporting (Section 313).

Specific processes are defined under CERCLA for a Preliminary Assessment to determine if further study is necessary, a Site Inspection to determine if there is a release or potential release and the nature of associated threats, preparing a Hazard Ranking System Analysis to determine if the site should be listed on the NPL, conducting a Feasibility Study to develop and evaluate options for remedial action, a Remedial Investigation to determine the nature and extent of the problem presented by the release, preparing a Record of Decision to describe the selected cleanup option, a Remedial Design of plans and specifications for remediation, and carrying out a Remedial Action of construction or implementation of cleanup.

Included in the provisions under EPCRA are civil sanctions and penalties for spill reporting and record-keeping violations in addition to the criminal penalties already specified in CERCLA. The penalties include large fines (up to \$250,000 for an individual) and imprisonment for up to three years for a first offense for knowingly violating reporting requirements.

Health and safety training is required under CERCLA for individuals who handle, sample, inspect, or otherwise deal with hazardous materials. The specifics of the required health and safety training are discussed in detail in subchapter 8.1 of this handbook.

For the identification, investigation, and remediation of release sites, numerous regulations have been promulgated under CERCLA (primarily in 40 CFR part 300—National Oil and Hazardous Substances Pollution

Contingency Plan) and extensive guidance documentation has been prepared.

APPLICABILITY

CERCLA is applicable to any person who owns or operates or who at the time of disposal owned or operated, or who accepted hazardous substances for transport and selected a facility at which hazardous substances are or have been stored, treated, or disposed of unless such facility has a permit issued under or has been accorded interim status under RCRA.

The term "person" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body. CERCLA is applicable to all operations and facilities of DOE/NV, its contractors, laboratories, and corporate tenants. Section 120 of SARA makes CERCLA applicable to federal agencies. Also, this sentiment is reinforced by Exec. Order No. 12856, "Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements," signed by President Clinton on August 3, 1993.

Nevada law regarding hazardous materials is found in NRS 459.380 to 459.856, and Nevada regulations are codified in NAC Chapter 459.

DOE/NV's Environmental Restoration programs are driven primarily by the "corrective action" provisions of RCRA, not CERCLA

PROCESS FOR COMPLIANCE

The specific processes for compliance with the regulatory requirements of CERCLA are site dependent and vary according to the type of release and the remedial work that may have been accomplished to date. Compliance with the provisions of EPCRA require personnel training and extensive reporting and record keeping.

INFORMATION AND REPORTING REQUIREMENTS

Section 103(3)(b) of CERCLA requires a person who owns or operates a facility at which hazardous

substances are or have been stored, treated, or disposed of to notify the Administrator of the Environmental Protection Agency of the existence of such facility, specifying the amount and type of any hazardous substance to be found there, and any known, suspected, or likely releases of such substances from such facility. The state of Nevada requires this same information per NRS 459.3828.

Under the emergency notification provisions of CERCLA Section 103, and EPCRA Section 304, a person is required to notify the National Response Center of any release of a hazardous substance (unless it is a federally permitted release or an exempt release) in a quantity equal or exceeding the reportable quantity listed in 40 CFR 302 and 40 CFR 355. Any DOE/NV contractor or NTS user using hazardous materials must notify DOE/NV immediately of any spill or release of these materials.

Phone numbers for the National Response Center are (800) 424-8802 and (202) 426-2675.

The DOE/NV facility users must be prepared to provide the DOE/NV, or its designee, with the following information:

- The chemical name and common names of the substance released;
- An indication of the hazard involved, including any known specific health or environmental risks;
- An estimate of the amount of material released;
- The time and duration of the release;
- The medium into which the release occurred;
- Any proper precautions that should be taken in responding to the release; and
- A point of contact for any additional information that might be required or requested by the DOE/NV.

As soon as practical after a release, facility users must provide the DOE/NV with written documentation of the reason for the release, the steps that were taken, and what corrective actions will be implemented to prevent releases in the future. The DOE/NV will determine if

the release is exempt and, if not, will notify the cognizant regulatory authorities.

The EPCRA also requires that facilities routinely report to the EPA and state authorities the quantities of hazardous materials they have on hand. The EPCRA Reporting Requirements are found in the following sections of the Act:

- Section 311, Material Safety Data Sheets - (See 40 CFR 370.21)
- Section 312, Emergency and Hazardous Chemical Inventory - (See 40 CFR 370.25.)
- Section 313, Toxic Chemical Release Forms - (See 40 CFR 372.22.)

Any hazardous material used at a DOE/NV site must have an **Material Safety Data Sheet** available for inclusion in the DOE/NV MSDS database prior to its transportation onto the site. The MSDS information must include both the chemical and common name of the substance, the name and location of the facilities where the material will be stored and used; information on the hazardous nature of the material; and any precautions or special measures that are required for handling, storing, or disposing of the materials. Additional information may be requested before notifying the State Emergency Response Commission and local authorities.

Emergency and hazardous chemical inventory reporting is also required. These inventories may include two tiers of information. Tier I reporting provides estimates of the quantities of chemicals on hand by *category*. Tier II reporting provides more detailed estimates of the quantities of substances by *chemical name*. For mixtures of substances, information about each constituent chemical or of the mixture, or both may be required. This inventory information will be made available to the public.

Toxic chemical release forms must be reported to the EPA and the state annually. In Nevada, these forms must be submitted to the administrator of EPA Region 9 and to its Emergency Management "Title III" Coordinator and to the director of the Nevada Division of Environmental Protection. For each toxic chemical known by the owner or operator to be manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in 40 CFR

372.25 at its covered facility described in 40 CFR 372.22 for a calendar year, the owner or operator must submit to the EPA and to the state in which the facility is located a completed EPA Form R (EPA Form 9350-1). Information shall include the following:

- Documentation supporting any determination that a claimed allowable exemption under §372.38 applies.
- Data supporting the determination of whether a threshold under §372.25 applies for each toxic chemical.
- Documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an off-site location.
- Documentation supporting the use indications and quantity on site reporting for each toxic chemical, including dates of manufacturing, processing, or use.
- Documentation supporting the basis of estimate used in developing any release or off-site transfer estimates for each toxic chemical.
- Receipts or manifests associated with the transfer of each toxic chemical in waste to off-site locations.
- Documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.

Starting with the 1991 reporting year, the **Pollution Prevention Act of 1990** and Executive Order 12856 requires those owners and operators who are required to file annual toxic chemical release reports under SARA Section 313 to provide additional information regarding pollution source reduction and recycling. Data are to be provided in terms of percent change from that reported the previous year, the amount recycled and the percent change in recycling from the previous year, and the source reduction practices used for each chemical. **Annual Progress Reports** shall be submitted beginning October 1, 1995, and continue

until October 1, 2001, upon which time this additional reporting requirement expires.

The Pollution Prevention Act establishes a national policy for waste management and pollution control that focuses on source reduction, followed sequentially by environmentally safe recycling, treatment, and lastly, disposal. Disposal or releases to the environment should occur only as a last resort. In response, the DOE has committed to participate in the EPA's 33/50 Pollution Prevention Program. The goal, for facilities already involved with SARA section 313 compliance, is to achieve a 33 percent reduction in the release of 17 priority chemicals by 1997 from a 1993 baseline. On August 3, 1993, Executive Order 12856 expanded the 33/50 program such that DOE must reduce its total releases of all toxic chemicals by 50 percent by December 31, 1999. The DOE also requires each DOE site to establish site-specific goals to reduce generation of all waste types.

Section 303 of the EPCRA requires that facilities subject to the Act provide information to local emergency planning committees. (See 40 CFR 355.)

Emergency planning notification is required for facilities that house a hazardous substance in quantities greater than the threshold planning quantity. Within 60 days of facility start-up, the owner/operator of the facility is required to notify (via the DOE/NV) the State Emergency Response Commission (SERC) of the following:

- The identity of facilities and transportation routes;
- Release notification procedures;
- Response procedures, methods, and equipment available;
- The identity of local and facility emergency coordinators;
- Evacuation plans; and
- Training programs.

The DOE/NV will designate an emergency planning coordinator who will participate in local emergency planning operations. Additional information requirements may be mandated by the State Emergency

Response Commission. Emergency planning is accomplished at the state and local level by:

- The SERCs that designate local emergency planning districts and committees, and supervise and coordinate the committees; and
- The Local Emergency Planning Committees (LEPCs) that handle public information and develop emergency plans for their districts.

In Nevada, the owner or operator of a facility shall perform an assessment of risks through analysis of hazards at least every 5 years and send the report to the Division of Environmental Protection. (See NRS 459.3836 - .386).

The Division may enter any facility during normal business hours and at any other time if there is probable cause to believe that a violation of any of the provisions of NRS 459.380 to 459.3874 has occurred (NRS 459.387).

A fee, not to exceed \$5,000 per year, is to be paid by each person who stores an extremely hazardous material in an amount greater than the threshold planning quantity established for such material in Appendix A or B of 40 CFR 355. A reporting fee of \$500 is to be paid by each person who is required to submit a toxic chemical release form pursuant to Public Law 99-499 (EPCRA), which becomes due upon the filing of the form (NRS 459.744).

Any person who possessed or had in his care any hazardous material involved in a spill or accident is responsible for cleaning and decontamination of the area affected (NRS 459.750). Such a person must "act promptly and appropriately," meaning that the person can be notified of the incident within 2 hours after the initial attempt to contact him; makes an oral or written commitment to clean and decontaminate the affected area properly within 2 hours after receiving notification of the incident; acts upon the commitment within 24 hours after making it; and cleans and decontaminates the affected area properly. A list of designated *highly hazardous substances* is found at NRS 459.3816.

The owner or operator of each facility registered pursuant to NRS 459.3828 shall:

Report to the division on or before July 1 of each year on:

- All efforts that were undertaken by the facility during the previous calendar year to assess and reduce risks related to highly hazardous substances;
 - Any changes in maintenance schedules and activities and any unanticipated maintenance on critical equipment or safety controls related to highly hazardous substances that were conducted at the facility during the previous calendar year;
 - All unanticipated and unusual events at the facility which resulted in the release of any quantity of a highly hazardous substance; and
 - All efforts undertaken by the facility to assess and remedy the release of any quantity of a highly hazardous substance.
2. Ensure that all records relating to the production, use, storage, or handling of highly hazardous substances and all records relating to the information submitted to the division in accordance with NRS 459.380 to 459.3874, inclusive, are prepared and protected to prevent the destruction or alteration of information and data contained in those records. The owner or operator shall maintain these records for at least 7 years.

DOE/NV CONTACTS

The principal point of contact for CERCLA compliance information is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq.*
- Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11001-11050 (Title III of the Superfund Amendments and Reauthorization Act of 1986, Pub.L. 99-499).*
- Pollution Prevention Act of 1990, 42 U.S.C. 13101.*

40 CFR 300-374, Subchapter J - Superfund, Emergency Planning, and Community Right-to-Know Programs.

EO 12580, Superfund Implementation, January 23, 1987.

EO 12856, Federal compliance with Right-To-Know Laws and Pollution Prevention Requirements, August 3, 1993.

EO 12969, Federal Acquisition and Community Right-To-Know, August 8, 1995.

Nev. Rev. Stat. 459.380 to 459.3874, Regulation of Highly Hazardous Substances.

Nev. Rev. Stat. 459.3836 - .386, Assessment of Risks Through Analysis of Hazards.

Nev. Rev. Stat. 459.735 - .746, State Emergency Response Commission.

Nev. Rev. Stat. 459.748. - .773, Responding to Spills, Accidents and Incidents.

Nev. Admin. Code 459.952 - .9536, Regulation of Highly Hazardous Substances.

Hazardous Material Emergency Planning and Community Right-to-Know, CERPRC, State of California, October 1988.

USEPA, Title III Fact Sheet, 1987.

7.4 TOXIC SUBSTANCES CONTROL ACT

REGULATORY SUMMARY

The Toxic Substance Control Act (TSCA), as amended, applies to manufacturers, processors, and distributors of chemical substances and mixtures of chemical substances in commercial use. A primary intent of the Act is to regulate chemical substances and mixtures which present an unreasonable risk of injury to health or the environment or which are imminent hazards without creating unnecessary economic barriers to technological innovation.

Title I, which embodies most of the original Act of 1976 (Pub. L. No 94-469), provides the regulatory framework for the U.S. Environmental Protection Agency to gather information about chemical substances and to regulate their manufacture, processing, and distribution. Section 4 requires manufacturers and processors to test substances for adverse effects on health and the environment and submit data to the EPA. Section 5 prohibits the manufacture or processing of any new substance or new use of a substance unless notice is given to the EPA 90 days in advance. Section 8 requires that records be retained indefinitely and provided to the EPA if requested.

The EPA has the authority under Section 6 to regulate and even ban or limit the production, processing, or distribution of a substance, and under Section 7, to seize products through civil action that are found to be an imminent hazard. The EPA can inspect facilities under Section 11, and refusal to comply with provisions of the Act may invoke civil penalties of up to \$25,000 for each violation and criminal penalties of up to \$25,000 per day, plus up to one year in prison (Sections 15 and 16).

Finally, under Section 18, the federal choice of action has usually prevailed in the courts to preempt state rules that are not essentially the same as the federal rules, except that the state may ban the use of a substance.

While enacting the TSCA, Congress has demonstrated its impatience with the pace of the EPA's rule making. Section 6(e) of the original Act required the EPA to prescribe methods for the disposal, handling, and labeling of polychlorinated biphenyls (PCBs) within six months of enactment. Thus, 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions," promulgated in 1978, was the earliest ruling on a specific chemical under the TSCA. Impatience was exhibited again when Congress added Title II, "Asbestos Hazard Emergency Response," by Pub. L. No. 99-519, in 1986. Other major amendments include Title III, "Indoor Radon Abatement," added by Pub. L. No. 100-551, in 1988, and Title IV, "Lead Exposure Reduction," added by Pub. L. No. 102-550 in 1992.

Polychlorinated Biphenyls

PCBs are subject to a complex regulatory program under Section 6(e) of TSCA. Under a "qualified ban" on PCBs, TSCA prohibits the manufacturing, processing, distribution, and use of PCBs other than in a totally enclosed manner unless specifically authorized or exempted by the EPA. These regulations are set forth in 40 CFR 761. The intent of the rule is to phase out the use of PCBs. PCBs also are regulated to some degree under the CWA, RCRA, and CERCLA as hazardous materials.

The use of PCBs continues to be allowed in some cases, if the equipment is "totally enclosed" or if EPA has specifically authorized its use. Equipment that meets one of these criteria is still subject to specific requirements for marking, storage, servicing, and disposal. The regulations distinguish between various types of equipment and various concentrations of PCBs.

PCBs are regulated in Nevada through the Nevada Division of Environmental Protection under the provisions of NAC 444.940 to 444.9555. The regulations require identification of PCB materials, generators, and transporters; preparation of shipping manifests; reporting; PCB testing and analysis; permits; and public notices. Definitions of PCBs and PCB-containing equipment and wastes are found at 40 CFR 761.3.

Asbestos

Citing a lack of regulatory guidance from the U.S. Environmental Protection Agency, Congress required the EPA to promulgate appropriate regulations regarding asbestos within 360 days of enactment of Title II. Title II requires that school authorities conduct periodic inspections for asbestos and determine the appropriate response action to protect human health. The Act also requires the EPA to study the hazards posed by asbestos in public and commercial buildings. A 1990 amendment requires persons who perform or plan inspections to become accredited through an appropriate training program. The EPA has codified its asbestos regulations in 40 CFR 763. These regulations allow a state to run its own asbestos control program if its provisions are at least as stringent as the requirements of 40 CFR 763, Subpart E.

Nevada regulations for the abatement of asbestos are found in NAC 618.850 to 618.986; regulations for the disposal of asbestos are in NAC 444.965 to 444.976. A person shall not engage in a project for the control of asbestos unless he or she holds a valid license issued by the Division of Occupational Safety and Health of the Nevada Department of Labor and Industrial Relations (NRS 618.790).

Nevada asbestos control regulations apply to any building or structure that is to undergo renovation or demolition if friable asbestos-containing material is (or may be) present. Before a building or structure which contains friable materials containing asbestos may be demolished, the asbestos must be removed pursuant to the requirements of NAC 618.959.

Before the commencement of a renovation project that will disturb friable structural fire-proofing, acoustical material that has been sprayed or troweled on, or any other suspected materials containing asbestos, a sample of the material must be analyzed for asbestos content by an accredited laboratory, unless the material is assumed to contain asbestos NAC 618.961(2). If any substance is found to be or contain asbestos, or is assumed to contain asbestos, the renovation project shall be deemed an activity for the abatement of asbestos and is subject to NAC 618.850 to 618.986, inclusive. Any material which is assumed to contain asbestos must be treated as material containing asbestos.

When the appropriate response action to an asbestos hazard is removal, there are other regulations that affect transportation and disposal of the asbestos waste generated by the action. The transportation of asbestos waste is covered by the Department of Transportation (49 CFR 173, Subpart J) and disposal is covered by the National Emissions Standards for Hazardous Air Pollutants (40 CFR 61, Subpart M). The requirements of 40 CFR 763, Subpart E, in no way supersede the worker protection and work practice requirements under 29 CFR 1926.58 (Occupational Safety and Health Administration asbestos worker protection standards for construction); 40 CFR 763, Subpart G (EPA asbestos worker protection standards for public employees); and 40 CFR 61, Subpart M (National Emission Standards for Hazardous Air Pollutants—Asbestos).

APPLICABILITY

The Nevada TSCA program is applicable to those activities involving the use and/or servicing of PCB-containing equipment and the demolition or renovation of buildings where asbestos may be encountered. Wastes containing PCB are considered to be hazardous wastes in Nevada (NAC 444.9453).

PROCESS FOR COMPLIANCE

Polychlorinated Biphenyls

Any facility that may use, store, or dispose of PCB material must submit a permit application to NDEP and to the EPA through DOE/NV. The permit application must include information on the quantities involved, procedures, and plans for the facility.

Compliance with TSCA primarily consists of an audit of possible PCB-containing equipment. Once PCB-containing equipment is identified, it may be used for the rest of its useful life. Facilities using or storing at one time at least 45 kilograms (99.4 pounds) of PCBs are subject to reporting and record keeping requirements (40 CFR 761.180). Visual inspections for leaks are required every three months for each PCB transformer or piece of equipment in use or in storage for reuse. PCB items must be marked "Caution Contains PCBs" in accordance with 40 CFR 761.45.

Use of oil containing PCBs in machinery or equipment currently operating is not expressly forbidden, but it is not recommended. Replacement equipment and oil should be PCB free. This pertains specifically to electrical transformers and associated equipment.

Transformers and other equipment that contain PCBs must be registered with the local fire departments. Combustible materials cannot be stored within an enclosure containing PCB transformers, or within five meters of an enclosure, or if unenclosed, within five meters of the transformer.

PCB items in storage for disposal must be disposed of within one year of the date they were removed from service.

Asbestos

A contractor intending to engage in a project for the abatement of asbestos shall notify the enforcement section of the Nevada Division of Occupational Safety and Health of the project on a form provided by the enforcement section. The completed form must be received by the enforcement section at least 10 days before any onsite work is begun at the project. The form must be accompanied by a fee ranging from \$100 to \$1,000 depending on the amount of asbestos material. The owner of a building will not be required to pay notification fees totaling more than \$2,000 in any calendar year.

INFORMATION AND REPORTING REQUIREMENTS

Polychlorinated Biphenyls

An annual report outlining the status of all PCB waste handling activities is required to be submitted to the EPA every July 1 for the previous calendar year. The Nevada Division of Environmental Protection requires that a copy of the annual report be submitted to it. Both agencies must be notified in writing within 60 days of the cessation of storage activities. All records must be maintained for five years after the facility ceases using or storing equipment.

To transport, treat, store, or dispose of wastes containing PCBs, the generator must apply for and receive an identification number from the EPA. A generator must label PCB-contaminated waste or equipment as follows:

NO. WASTE MATERIAL DESIGNATION

- B001 Oil contaminated with 500 ppm or greater of PCBs from transformers, capacitors, or other electrical equipment.
- B002 Oil contaminated with 50 ppm or greater of PCBs, but less than 500 ppm.
- B003 Oil contaminated above 500 ppm PCBs.
- B004 Soils contaminated with PCBs.
- B005 Solids and sludge contaminated by PCBs.
- B006 Clothing or rags contaminated by PCBs.
- B007 Capacitors contaminated by PCBs.
- B008 Dredge material contaminated by PCBs.
- B009 Other wastes contaminated by PCBs.

B010 Electrical equipment containing 50 ppm or greater of PCBs, but less than 500 ppm.

B011 Electrical equipment containing 500 ppm or greater of PCBs.

PCB Spill Reporting

Under the National Contingency Plan, all spills involving 10 pounds or more by weight of PCBs must currently be reported to the National Response Center (1-800-424-8802). However, provisions for clean up of PCBs are given in 40 CFR 761.125 which applies to all spills of PCBs at concentrations of 50 ppm or greater. Spills of 10 pounds or less must be cleaned up in accordance with this policy (in order to avoid EPA enforcement liability), but notification of the EPA is not required.

DOE/NV must inform NDEP of any release of PCB that may endanger the public, contaminate a public water supply, or cause harm due to fire or explosion. A report of a release incident would normally include:

- Name, phone number, and address of the facility and its operator;
- Date, time, duration, and type of incident;
- Source and quantity of material involved;
- Brief description of the spill location;
- Extent of any injuries;
- Precleanup sampling data and sampling methods used to determine spill boundaries;
- Assessment of actual or potential hazards to the environment or human health;
- Estimated quantity and disposition of any recovered materials resulting from the incident;
- Approximate depth and amount of soil excavation;
- Brief description of any solid surfaces cleaned and the double wash/rinse method used; and
- Post cleanup sampling data and sampling methods used to verify appropriate cleanup.

Within five days after the incident, a written report must be submitted to the NDEP which would normally include the following information:

- The information listed above for reporting;
- A description of the release and its causes; and
- Steps planned or taken to reduce, eliminate, or prevent a recurrence of the release.

Transportation of PCBs

A manifest for shipping PCBs is required by EPA regulations, as well as by DOT regulations (see subchapter 7.2). Copies of manifests and testing results for waste analyses should be retained for at least three years. Transporters of PCBs must have an EPA identification number. Transporters must follow the rules and guidelines for hazardous materials and waste transportation under the DOT regulations. A transporter must clean up any hazardous waste discharge that occurs during transportation or take such action as may be required or approved by federal, state, or local officials so that the hazardous waste discharge no longer presents a hazard to human health or the environment.

Disposal of PCBs

Because PCB hazardous wastes are only stored for short periods of time and are then shipped from the NTS to a disposal site in California, the DOE/NV is not currently subject to any final disposal regulations. PCB storage (temporary or permanent) is not allowed in surface impoundments or waste piles, nor are PCBs allowed to be mixed with other materials (particularly soil) as a mechanism for treatment or disposal.

NOTE: Generators of PCB waste who store their own waste for less than nine months, or in quantities less than 1,000 kilograms, are not required to obtain a TSCA permit for these activities.

Asbestos

Employers subject to 40 CFR 763 must report to the Regional Asbestos Coordinator, EPA Region IX, at least 10 days before they begin any asbestos abatement project, except one that involves less than either 3 linear feet or 3 square feet of friable asbestos material, or is an emergency project. Employers must report any

emergency project covered by this rule as soon as possible but in no case more than 48 hours after the project begins.

DOE/NV CONTACTS

The point of contact for more information concerning Nevada's TSCA program is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

- Toxic Substance Control Act of 1976, as amended, 15 U.S.C. 2601 et seq.*
- 40 CFR 262, *Standards Applicable to Generators of Hazardous Waste; Subpart A, General; Subpart B, The Manifest; Subpart C, Transportation Requirements*
- 40 CFR Subchapter R—*Toxic Substances Control Act (Parts 700 - 799).*
- 40 CFR 761, *Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, Use Prohibitions.*
- 40 CFR 763, *Asbestos*
- 40 CFR 745, *Lead-based Paint Poisoning Prevention in Certain Residential Structures (1996).*
- 49 CFR 173 Subpart A and B, *Section 173.510.*
- 49 CFR Part 173, *Subpart J, Transportation of Asbestos Waste.*
- 49 CFR Part 61, *Subpart M, Disposal of Asbestos Waste.*
- NAC 444.940 to 444.9555, *Polychlorinated Biphenyls.*
- NAC 618.986, *Nevada Regulations for the Abatement of Asbestos.*
- NAC 444.976, *Nevada Regulations for the Disposal of Asbestos.*
- NRS 618.790,

*EPA Region IX Policy on PCB Cleanup,
Recordkeeping, and Sampling Requirements.*

7.5 FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT

REGULATORY SUMMARY

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) was enacted to control the manufacture, shipment, storage, and use of all insecticides, fungicides, and rodenticides (generically referred to hereafter as pesticides). A pesticide is defined as any substance or mixture of substances, including any living organisms or any product derived therefrom, or any fungicide, herbicide, insecticide, nematocide, or rodenticide, which is intended to prevent, destroy, repel, attract, or mitigate any pest, rodent, nematode, snail, slug, fungus, weed, and any other form of plant or animal life or virus (except virus on or in living man or animals) which is normally considered to be a pest; and any substance or mixtures of substances intended to be used as a plant regulator, defoliant or desiccant, and any other substances intended for such use as may be named by regulation. Regulation is to prevent "unreasonable adverse effects on the environment" through registration and labeling of pesticides (Section 3) and registration of producers (Section 7) to control usage, and suspension of registration (Section 6) to prevent use.

The EPA is the implementing regulatory agency for FIFRA, and, along with the Food and Drug Administration (FDA), registers new pesticide products and regulates the use of existing pesticides. Under FIFRA, states have the primary enforcement responsibility for pesticide use violations. Nevada law for the custom application of pesticides is found in NRS 555.260 -460 which designates this responsibility to the Division of Agriculture of the Department of Business and Industry.

The Division of Agriculture inspectors may enter (NRS 555.420) upon any public or private premises at any reasonable time in order to have access for the purpose of inspecting, auditing, sampling or monitoring any aircraft, ground equipment, records, storage, pesticides, pesticide sprays, disposal operations, or other operations which are subject to NRS 555.2605 through 555.460.

APPLICABILITY

EPA regulations (40 CFR Subchapter E) and Nevada regulations (NAC Chapter 555) are applicable to those activities at the NTS and to all DOE/NV activities involving the use, storage, handling, and disposal of registered pesticides.

Applicators of pesticides must be trained and qualified and perform their duties under the direct supervision of a state-certified and licensed applicator. Prior to applying restricted-use pesticides, a certificate must be applied for and obtained from the Nevada Department of Agriculture. A restricted-use pesticide is a pesticide that even when applied in accordance with its directions for use, warnings and cautions for the uses for which it is registered, or in accordance with a widespread and commonly recognized practice, may generally cause, without additional regulatory restrictions, unreasonable adverse effects on the environment, including injury to the applicator.

The EPA regulations in 40 CFR 171.4 recognize ten categories of pesticide applicators for which standards for certification should be specifically reflected in state certification programs. The state of Nevada has adopted a similar list at NAC 555.620. Of these, three may be most applicable to DOE/NV activities:

- **Ornamental and turf pest control.** Applicators shall demonstrate practical knowledge of pesticide problems associated with the production and maintenance of ornamental trees, shrubs, plantings, and turf, including cognizance of potential phytotoxicity due to a wide variety of plant material, drift, and persistence beyond the intended period of pest control. Because of the frequent proximity of human habitations to application activities, applicators in this category must demonstrate practical knowledge of application methods which will minimize or prevent hazards to humans, pets, and other domestic animals.
- **Right-of-way pest control.** Applicators shall demonstrate practical knowledge of a wide variety of environments, since rights-of-way can traverse many different terrains, including waterways. They shall demonstrate practical knowledge of problems on runoff, drift, and excessive foliage destruction and ability to recognize target organisms. They shall also demonstrate practical knowledge of the

nature of herbicides and the need for containment of these pesticides within the right-of-way area, and the impact of their application activities in the adjacent areas and communities.

- **Industrial, institutional, structural, and health-related pest control.** Applicators must demonstrate a practical knowledge of a wide variety of pests, including their life cycles, types of formulations appropriate for their control, and methods of application that avoid contamination of food, damage and contamination of habitat, and exposure of people and pets. Since human exposure, including babies, children, pregnant women, and elderly people, is frequently a potential problem, applicators must demonstrate practical knowledge of the specific factors which may lead to a hazardous condition, including continuous exposure in the various situations encountered in this category. Because health-related pest control may involve outdoor applications, applicators must also demonstrate practical knowledge of environmental conditions, particularly related to this activity.

General standards of practice (NAC 555.400) require, among other things, that each person engaged in the application of pesticide for hire apply pesticides only in those categories of control for which he or she is licensed. All other applicators must be under the immediate supervision of an operator who is qualified and currently licensed in the appropriate category. Applicators must provide storage for all undiluted pesticide material in a locked facility. Servicemen's kits, which contain insecticides, poison baits, or concentrates must be handled with extreme caution and must not be left where children or other unauthorized persons might remove the contents.

PROCESS FOR COMPLIANCE

It is unlawful for any person to use any registered pesticide in a manner inconsistent with its labeling. The term "use" includes arranging for the application of the pesticide, mixing and loading the pesticide, and making necessary preparations for the application of the pesticide, including responsibilities related to worker notification, training of handlers, decontamination, use and care of personal protective equipment, emergency information, and heat stress management. Use includes application of the pesticide and the post-application activities necessary to reduce

the risks of illness and injury resulting from handlers' and workers' occupational exposures to pesticide residues during the restricted-entry interval plus 30 days. These activities include, but are not limited to, responsibilities related to worker training, notification, and decontamination. Use also includes other pesticide-related activities, including, but not limited to, providing emergency assistance; transporting or storing pesticides that have been opened; and disposing of excess pesticides, spray mix, equipment wash waters, pesticide containers, and other pesticide-containing materials.

Storage requirements are supposed to be included on the label as required in 40 CFR 156. The EPA formerly included recommended storage requirements in 40 CFR 165, but removed Part 165 by 60 FR 32094, June 19, 1995. An earlier proposed rule (59 FR 6712, February 11, 1994) to amend Part 165, has not been adopted. At this time, there are no federally recommended storage requirements under the FIFRA regulations.

Pesticide applicators must be instructed in the use and handling of pesticides. Restricted-use pesticides can only be applied by a state-certified and licensed applicator or by an individual under the supervision of a certified and licensed applicator. To become a state-certified and licensed applicator, Nevada requires: (1) an examination to determine that the person possesses adequate knowledge concerning the proper use and application of pesticides, the dangers involved, and the precautions to be taken in connection with their application; (2) the person to have no less than two years of practical experience, or possess university credits of not less than 16 credit hours in biological sciences (of which not less than 8 credit hours must be in subjects directly related to the categories of pest control in which the applicant wishes to be licensed); and (3) the person shall have six or more months of practical experience in pesticide application or related pest control.

The state may require the applicant to show, upon examination, that he/she possess the adequate knowledge concerning the proper use and application of restricted-use pesticides and the dangers involved and precautions to be taken in connection with their application, including, but not limited to, the following subject areas:

- Label and labeling comprehension
- Environmental consequences of pesticide use and misuse
- Pests
- Pesticides
- Equipment
- Application techniques
- Laws and regulations
- Safety

A restricted-use pesticide certificate is valid for four calendar years and expires on December 31. Empty containers and unused pesticides must be disposed of properly in accordance with EPA, state, and local laws and regulations. See 40 CFR 261.7, "Residues of Hazardous Waste in Empty Containers."

INFORMATION AND REPORTING REQUIREMENTS

NAC 555.410 requires urban-structural licensees to:

1. Keep a record for two years of each property treated, showing:
 - The date of treatment.
 - The address where treatment was conducted.
 - The name of the applicator.
 - The item treated.
 - The number of units treated.
 - The total amount of material and concentration applied.
 - The purpose for which the item was treated.
 - If treatment is conducted in the categories of ornamental and turf, fumigation, or shade trees and fruit trees, record the temperature and wind velocity and direction at the start and finish of treatment.
2. Report immediately to the administrator any emergency dumps of pesticides by aircraft, and accidents of aircraft loaded with pesticides or ground equipment involving the spillage of pesticides, or the spillage at sites of operations of

unmixed pesticides detrimental to people, wildlife, domestic animals, or crops.

3. Report to the administrator within 48 hours any cases of apparent pesticide poisoning requiring medical treatment.
4. File with the administrator, on forms to be furnished by him, a monthly report of pest control operations.

The report must be filed on or before the 15th day of the following month. Negative reports must be filed for those periods during which no operations were conducted unless written notification is given declaring that no work is to be done until a specified month and year when operations are expected to resume.

5. Submit to the administrator any reports or records he requests.

Pesticide stocks must be inventoried annually and be included in the facilities Health and Safety Plan and on the list of Hazardous Materials maintained in accordance with SARA Title III requirements.

DOE/NV CONTACTS

The point of contact for additional FIFRA information is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Federal Insecticide, Fungicide, and Rodenticide Act, as amended, 7 U.S.C. 136 et seq.

40 CFR Subchapter E, Pesticide Programs (Parts 152 - 186).

NRS 555.2605 through 555.460, Custom Application of Pesticides.

NAC Chapter 555, Control of Insects, Pests, and Noxious Weeds (See §§ 555.250 - .700).

8 HEALTH AND SAFETY

8.1 OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

REGULATORY SUMMARY

While the Occupational Safety and Health Act of 1970 (OSHA) is not an environmental protection law *per se*, it is a law that aims to protect workers from environmental hazards in the work place. OSHA is applicable to all activities involving workers. Section 19 of the Act makes federal agencies responsible for the same occupational standards as other employers, but federal agencies must report directly to the U.S. Department of Labor, whereas other employers may report to a state agency.

The Act is administered by the Assistant Secretary for Occupational Safety and Health, as delegated by the Secretary of Labor. Under Section 18 of the Act, states may take responsibility for enforcement of occupational safety and health standards by submitting a plan which must be approved by the Assistant Secretary. State standards and enforcement provisions set forth in the plan must be as effective as the federal standards. The Nevada Occupational Safety and Health Plan is in effect and is administered by the Division of Enforcement for Industrial Safety and Health (DEISH) under the Nevada Occupational Safety and Health Act (NRS Chapter 618).

OSHA requirements applicable to DOE/NV, contractor, and corporate tenant activities are covered by 29 CFR 1910, "Occupational Safety and Health Standards" (applicable to the general work place), and Part 1926, "Safety and Health Regulations for Construction." These requirements are applicable to all private and federal facilities. All DOE/NV contractors and facility users are required to be familiar with these requirements and should have formal safety and health programs to protect their workers.

DOE/NV contractors and facility users must also be aware of any special NTS activities that could create special hazard situations to workers or to the public. Maintaining awareness requires frequent contact with DOE/NV personnel and other contractors. Because of the highly varied and often hazardous activities at the NTS, special emphasis must be placed on the

requirements of 29 CFR 1910, Subpart H, "Hazardous Materials," and Subpart Z, "Toxic and Hazardous Materials."

Because of the extensive clean-up operations at DOE facilities, special attention also should be paid to 29 CFR 1910.120, "Hazardous Waste Operations and Emergency Response." Highlights of the requirements pertaining to these provisions include:

- **Safety and Health Program:** Each contractor/user must develop and implement a written safety and health program for employees involved in hazardous waste operations.
- **Site Characterization and Analysis:** Hazardous waste sites must be evaluated.
- **Site Control:** Certain control procedures must be implemented.
- **Training:** Initial, refresher, or review training must be provided to employees before they are permitted to engage in hazardous waste operations.
- **Medical Surveillance:** This must be provided for employees involved with hazardous substances, or who routinely use respirators.
- **Engineering Controls, Work Practices, and Personal Protective Equipment:** Appropriate control practices and equipment must be used to protect employees from exposure to hazardous substances and health hazards.
- **Monitoring:** Work places must be monitored to ensure that employees are not exposed to conditions exceeding established permissible exposure limits for hazardous substances.
- **Informational Program:** Contractors must develop and use a safety and health plan to keep workers informed of the degree and nature of safety and health hazards specific to the work site.
- **Handling Drums and Containers:** Hazardous substances and contaminated soils, liquids, and other residues must be handled, transported,

labeled, and disposed of in accordance with prescribed procedures.

- Decontamination: Contractors must develop and implement procedures for all phases of chemical or radiological decontamination projects.
- Emergency Response: A plan must be developed and implemented by all affected contractors/users to handle anticipated on-site emergencies.
- Illumination: Hazardous chemical work areas must be lighted in accordance with applicable requirements.
- Sanitation: Appropriate sanitation facilities, including potable water, shall be provided for all hazardous work area employees.
- New Technologies: The employer shall develop and implement procedures for the introduction of effective new technologies and equipment developed for the improved protection of employees working with hazardous waste clean-up operations, and the same shall be implemented as part of the site safety and health program to ensure that employee protection is being maintained.
- Contractors and Subcontractors: Any DOE/NV contractor who retains subcontractor services for work in hazardous waste operations must inform the subcontractors of any potential fire, explosion, health or safety hazards that have been identified.

APPLICABILITY

OSHA regulations apply to all DOE/NV, contractor, and corporate tenant activities.

PROCESS FOR COMPLIANCE

The regulations require the facility owner/operator to observe the following:

- Health and Safety Program;
- Facility Characterization;
- Facility Security and Control; and
- Employee Medical Surveillance.

INFORMATION AND REPORTING REQUIREMENTS

Each DOE/NV contractor and corporate tenant must maintain a health and safety plan and the records of employee medical surveillance. A manifest system must be employed to account for hazardous waste movement through transportation. (See Subchapter 7.2 of this handbook.)

DOE/NV CONTACTS

The point of contact for more information regarding OSHA hazardous waste operation requirements is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

- Occupational Safety and Health Act of 1970, 29 U.S.C. 657 et seq.*
- 29 CFR Part 1910, Occupational Safety and Health Standards.*
- 29 CFR Part 1910, Subpart H, Hazardous Materials.*
- 29 CFR Part 1910.120, Hazardous Waste Operations and Emergency Response.*
- 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances.*
- 29 CFR 1910.1096, Ionizing Radiation.*
- 29 CFR 1910.1200, Hazard Communication.*
- 29 CFR 1926, Safety and Health Regulations for Construction.*
- 29 CFR 1990, Identification, Classification, and Regulation of Potential Occupational Carcinogens.*
- 40 CFR 264.16 and 40 CFR 265.16, Personnel Training (Hazardous Waste Management).*
- NRS Chapter 618, Nevada Occupational Safety and Health Act.*

8.2 NOISE CONTROL ACT OF 1972

REGULATORY SUMMARY

The Congress declares that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare. To that end, it is the purpose of this Act to establish a means for effective coordination of federal research and activities in noise control, to authorize the establishment of federal noise emission standards for products distributed in commerce, and to provide information to the public respecting the noise emission and noise reduction characteristics of such products. The Act is administered by the U.S. Environmental Protection Agency.

In general, the Noise Control Act applies to manufacturers of equipment considered by EPA to be a source of noise that should be regulated and labeled. The Act also applies to users of such equipment insofar as they might remove labels or disable noise control devices. Noise in the work place does not come under this Act, as it is regulated under OSHA.

Section 4 of the Noise Control Act establishes that federal agencies shall comply with federal, state, interstate, and local requirements respecting control and abatement of environmental noise to the same extent that any person is subject to such requirements.

Certified low-noise-emission products shall be acquired by purchase or lease by the federal government for use by the federal government in lieu of other products if the Administrator of General Services determines that such certified products have procurement costs which are no more than 125 percent of the retail price of the least expensive type of product for which they are certified substitutes.

No state or political subdivision thereof may adopt or enforce any law or regulation which sets a limit on noise emissions from a new product which is not identical to the federal regulation. The Nevada state law delegates regulation of noise to the counties and cities; therefore, only the Nye County noise law would apply on the Nevada Test Site. On the off-site highways, Nevada state traffic regulations (NAC 484.150-.185) would apply. These state regulations list noise emission standards and measurement methods

and conditions for vehicular noise. Noise measurements must conform to ANSI Standard S1.4-1971. Construction machinery is exempted by NAC 484.200. Noise limits do not apply to vehicles equipped with off-highway tires that are only incidentally or occasionally operated on a highway.

APPLICABILITY

The Act is applicable to all DOE/NV and corporate tenant activities involving noise generation. Exemptions from this Act include testing of military weapons or equipment designed for combat use; use of rockets or equipment designed for research, experimental or development work for the National Aeronautics and Space Administration (NASA); or other machinery and equipment designed for use in experimental work done for or by the federal government (42 U.S.C. 4907, "Definitions").

PROCESS FOR COMPLIANCE

Noise suppression shall be initiated at all noise generating sites to minimize noise. Federal agencies shall carry out their programs in a manner that promotes an environment free of noise that could jeopardize the public's health or welfare. Federal agencies shall comply with state and local requirements for the control and abatement of environmental noise.

INFORMATION AND REPORTING REQUIREMENTS

Federal agencies shall furnish information, within reason, to determine the nature, scope, and results of their noise research and noise control programs to the EPA Administrator.

DOE/NV CONTACTS

The point of contact for more information relative to the Noise Control Act is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

The Noise Control Act of 1972, 42 U.S.C. 4901-4918.
40 CFR 201 - 211, Noise Abatement Program.

NAC 484.150-185, Noise Emission Standards.

NAC 484.200, Construction Machinery is Exempted.

8.3 SAFE DRINKING WATER ACT OF 1974

REGULATORY SUMMARY

The Safe Drinking Water Act of 1974 (SDWA) addresses construction of water distribution systems, wellhead protection, primary and secondary drinking water standards, permitting for plans and specifications for the construction and operation of public water supply systems, and storage and distribution specifications. The Act enables the state of Nevada, with EPA's authorization, to regulate public drinking water supplies by establishing and enforcing drinking water standards and by developing and implementing aquifer and water source protection regulations. The Nevada regulations are enforceable by the Nevada Division of Health, within the Nevada Department of Human Resources. The state of Nevada adopts the "National Primary Drinking Water Regulations" (40 CFR 141 to 143) at NAC 445A.453 and sets its own secondary standards at NAC 445A.455. The regulations for public water systems, treatment, bottled water, permits, certification of operators, and construction of water supplies are listed at the end of this subchapter under the heading, References.

The 1996 amendments to the SDWA include an important right-to-know component. Operators of public water systems must now provide annual reports to their customers that state the source and contaminant contents of their water. The EPA must publish regulations regarding the contents of these reports by August 6, 1998.

Underground injection control, which is also regulated under the SDWA, is discussed in subchapter 7.1.2.

APPLICABILITY TO DOE/NV ACTIVITIES

The SDWA is applicable to DOE/NV activities involving drinking water, as well as water supply and conveyance systems. The water supply systems at the NTS are considered public water supplies, and

therefore must meet all federal, state, interstate, and local drinking water standards.

PROCESS FOR COMPLIANCE

Plans for construction of public drinking water supply systems must be approved by the State Health Officer (SHO) from the Nevada Division of Health. Preliminary approval by the SHO allows a permit application to be submitted by DOE/NV for new water supply systems. An annual fee is charged upon approval of the permit application.

The permitted system must be sampled by the SHO prior to initial operation of the system. This will ensure that the water supplied by the system meets all federal, state, interstate, and local water quality standards. Treatment programs are recommended by the SHO. The SHO may also recommend periodic testing, which is the responsibility of the contractor operating the system.

Wellhead protection is required under the SDWA amendments. This is usually accomplished by the establishment of a wellhead protection area around the well. This area represents a portion of an aquifer which includes all or part of the area of influence around a pumping well and portions of the upgradient recharge areas. DOE/NV must be contacted prior to the placement of any new facility in the vicinity of an existing water well.

INFORMATION AND REPORTING REQUIREMENTS

All public drinking water systems must deliver a product that meets federal, state, interstate, and local drinking water standards. All systems must receive permits to operate from the SHO and must stay within all specified regulations and water quality standards. Drinking water systems are subject to the following:

- Approval of new system plans and specifications.
- Application for permits to construct new systems.
- Initial testing of water quality for new systems (System must meet primary and secondary drinking water standards for both the state of Nevada and the U.S. EPA before operation).

- Periodic testing of water quality (if required) by the system operator and reporting to the SHO through the DOE/NV.
- Demonstration that the wellhead is protected from possible contaminants.

NOTIFICATION

All personnel utilizing public drinking water systems found to be in violation of applicable maximum contaminant level (MCL) or treatment techniques, for both the state of Nevada and the EPA, shall be notified by the owner or operator as soon as possible but not later than 14 days after discovering the violation.

RECORDS AND INSPECTIONS

Records shall be established, reports made available, and inspections conducted of "permitted" primary drinking water systems to aid the EPA Administrator and/or the DOE/NV in determining compliance, evaluating health risks, and in establishing more appropriate future orders and regulations.

DOE/NV CONTACTS

The point of contact for more information regarding the SDWA is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.

40 CFR 141-143, National Primary and Secondary Drinking Water Regulations.

E.O. 12088, Federal Compliance.

NAC 445.450 to .492, Public Water Systems.

NAC 445A.495 to .540, Treatment of Water.

NAC 445A.544 to .590, Bottled Water.

NAC 445A.595 to .614, Permits to Operate Privately Owned Systems.

NAC 445A.617 to .652, Certification of Operators of Privately-Owned Systems.

NAC 445A.655 to .682, Water Supply

NAC 445.370 to 445.420, Construction of Water Distribution Systems, Water Supply Wells, and Storage and Distribution Specifications.

8.4 DOE OCCUPATIONAL RADIATION PROTECTION RULE, 10 CFR 835

REGULATORY SUMMARY

In December 1993, DOE promulgated a primary standard for occupational radiation protection of workers at its facilities. The provisions of 10 CFR 835 are nuclear safety requirements which, if violated, will provide the basis for the assessment of civil and criminal penalties under the Price-Anderson Amendments Act of 1988.

The rule established radiation protection standards, limits, and program requirements for worker protection from ionizing radiation.

DOE occupational Radiation Protection requirements applicable to DOE/NV contractors and corporate tenant activities are covered by 10 CFR 835. These requirements are applicable to all DOE activities involving radioactive material, one of which is to have a Radiation Program to protect their workers. Highlights of a required Radiation Protection Program include the following:

- Occupational exposure limits for employees shall be controlled so annual limits are not exceeded. The total effective dose equivalent shall be determined by summing the effective dose equivalent from the external exposures and the committed effective dose equivalent from intake (internal exposures) during the year.
- Radiological area entry controls shall be maintained for each radiological area. The degree of control is dependent on radiological hazards within the area.

- Areas that require posting and labeling, because of the presence or potential presence of radiation and/or radioactive material, must use DOE-approved signs and labels.
- Individual monitoring and the results of internal and external dose measurements shall be recorded and the records maintained by a DOE records management program.
- All general employees shall be trained in radiation safety prior to receiving occupational exposure during access to controlled areas. Retraining is required every two years or when there is a significant change to radiation protection policy and procedures.
- Measurement shall be made to maintain radiation exposures in controlled areas as low as is reasonably achievable by facility and equipment design and administrative control.

APPLICABILITY

The regulations of 10 CFR 835 apply to all DOE/NV contractor and corporate tenant activities that involve radioactive material.

Exclusion from these requirements apply to:

- Activities that are regulated through a license by the Nuclear Regulatory Commission;
- Activities conducted under the authority of the Director, Naval Nuclear Propulsion Program;

- Activities conducted under the Nuclear Explosives and Weapon Safety Program;
- Background radiation, radiation doses received as a patient for the purpose of medical diagnosis or therapy, or radiation doses received for voluntary participation in medical research programs.

PROCESS FOR COMPLIANCE

This regulation requires the facility owner or operator to develop a Radiation Protection Program.

INFORMATION AND REPORTING REQUIREMENTS

Each DOE/NV contractor and corporate tenant must maintain a Radiation Protection Program and maintain monitoring and employee exposure records.

DOE/NV CONTACTS

The points of contact for more information regarding radiation protection are the Director, Environment, Safety & Health Division, (702) 295-1433

REFERENCES

10 CFR 835, Occupational Radiation Protection.

U.S. DOE, Radiation control Manual, DOE/EH-0256T.

29 CFR 1910.1096, Ionizing Radiation.

9 LAND USE MANAGEMENT

9.1 FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976

REGULATORY SUMMARY

The Federal Land Policy and Management Act of 1976 (FLPMA) is administered by the U.S. Department of the Interior through the Bureau of Land Management (BLM). The purpose of the Act is to allow the federal government to retain ownership and control of public lands, to manage land use, and to make land transfers. Subchapter II of the Act concerns use, acquisitions, and dispositions (sales and withdrawals) of public land. The government retains the mineral rights to public lands sold to private parties. The Secretary of the Interior may withdraw parcels of public land on behalf of another federal agency for a specific public use (such as the NTS). An applicant for a withdrawal, such as DOE, must submit applications that identify current use and resources, proposed use, legal description of location and areal extent, length of proposed use, and environmental and socioeconomic impacts. Subchapter V allows the Secretary to grant rights-of-way over public lands for a specific purpose. Prior to granting a right-of-way (ROW) for a project that may have a significant environmental impact, the Secretary shall require a plan of construction, operation, and rehabilitation. This plan may be integrated into the National Environmental Policy Act review. See Chapter 2 of this handbook.

The regulations concerning the sales and withdrawals of public lands are found in Title 43 CFR, Chapter II. Regulations governing withdrawals are set forth in 43 CFR 2300 and those for ROW are set forth in 43 CFR 2800. The duration of withdrawals is discussed in 43 CFR 2310-3-4. The Secretary may withdraw 5,000 or more acres, subject to Congressional review, for any length of time not to exceed 20 years. The Secretary may withdraw fewer than 5,000 acres without Congressional review, for a period not to exceed 20 years, but not to exceed 5 years to preserve lands for a specific use then under consideration by either House of Congress. The Secretary may make emergency withdrawals for periods not to exceed three years. Withdrawals may be extended by the same process as the original withdrawal. Aggregate withdrawals that

total more than 5,000 acres are treated as a withdrawal of 5,000 or more acres.

APPLICABILITY TO DOE/NV ACTIVITIES

The FLPMA is applicable to any DOE/NV activity that involves the acquisition of land from current public lands, the acquisition of access to NTS land via public lands, or the use of BLM land administered by the U.S. Air Force.

PROCESS FOR COMPLIANCE

For Withdrawals

To withdraw fewer than 5,000 acres, a formal request by the head of the requesting agency or department stating the purpose and period of time the land will be needed is made through the BLM to the Secretary of the Interior.

To withdraw 5,000 or more acres, the requesting agency must conduct preapplication consultations with the state office of the BLM where a discussion of the possible alternatives should take place. The attendees will establish a schedule of investigations, studies, analyses, public meetings, and negotiations with other agencies and departments that may be involved. The BLM will not take action on a proposed withdrawal without the submission of an application.

For Rights-of-way

The process for obtaining a ROW begins with preapplication consultation with the BLM, where the parties discuss the information needed for the permit and coordinate with other agencies and projects. The applicant is required to obtain the appropriate permits and licenses from agencies that enforce the relevant environmental regulations before the BLM will grant a ROW. Information submitted to these agencies must also be provided to the BLM with the ROW application. The application is filed with either the BLM manager or the state director who has jurisdiction. At the discretion of the BLM, the applicant may have to submit a plan for the protection and rehabilitation of the environment.

A ROW application must include a project description in sufficient detail to determine the environmental impact, public benefits, and safety. When required, the project description must include descriptions of the facility, construction schedule and techniques, manpower requirements, and interrelationships with other projects.

The applicant must consider alternate routes in the application. Requests for ROWs may require aerial surveys or maps. An application may be denied if, in the opinion of the BLM, the proposed ROW use is inconsistent with the purpose for which the lands are managed or is not in the public interest; the ROW is requested by an unqualified applicant or supports a project inconsistent with applicable laws; or the developer lacks technical or financial capacity.

The BLM can suspend or terminate a ROW only in accordance with the terms and conditions of the ROW or with the consent of the agency or department managing the land area.

INFORMATION AND REPORTING REQUIREMENTS

For Withdrawals

- A clear explanation of the use planned for the land proposed to be withdrawn.
- A description of the location and an evaluation of current resources, present and past use, potential for environmental degradation, and economic impact on individuals, communities, governments, and the Nation.
- A description of any available alternative sites, including cost estimates.
- A description of consultations that have been or will be held with other federal, state, and local departments or agencies.
- A statement of the duration of time for the proposed withdrawal.
- Schedules and locations of public hearings or other public involvement.

- Locations where records of the proposed withdrawal may be examined by interested parties.

For Rights-of-way

- A precise description of the boundaries.
- A statement of the duration of time for the proposed ROW.
- A preliminary assessment of environmental impacts and the terms to ensure protection of the environment.
- A plan for operation and construction.
- A plan for rehabilitation and restoration of the ROW.
- A commitment for compliance with all federal, state, and local standards for public health, public safety, and environmental protection.

DOE/NV CONTACTS

The point of contact for more information regarding the Federal Land Policy and Management Act is the Director, Environment, Safety & Health Division, (707) 295-1433.

REFERENCES

- Federal Land Policy and Management Act of 1976, as amended, 43 U.S.C. 1701-1784.*
- EO 11988, Floodplain Management, May 24, 1977, as amended by EO 12148 of July 20, 1979, Federal Emergency Management, 44 FR 43239, July 24, 1979.*
- EO 11644, Use of Off-Road Vehicles on Public Lands, February 8, 1972, as amended by EO 11989, May 25, 1977, and EO 12608, September 14, 1987.*
- 43 CFR Part 2300, Land Withdrawals.*
- 43 CFR Part 2800, Rights-Of-Way, Principles and Procedures.*

9.2 MATERIALS ACT OF 1947

REGULATORY SUMMARY

The Materials Act of 1947, as amended, authorizes the Secretary of the Interior, under such rules and regulations as he may prescribe, to dispose of materials including but not limited to sand, stone, gravel, yucca, manzanita, mesquite, cactus, common clay, and timber or other forest products, on public lands if the disposal of such materials (1) is not otherwise expressly authorized by law, including U.S. mining laws; (2) is not expressly prohibited by laws of the U.S.; and (3) would not be detrimental to the public interest.

Government agencies may remove such materials without charge if the disposal is for the purposes of a public project. If the land has been withdrawn for the aid of a federal agency (see Chapter 9.1 of this handbook), disposal of materials only may be made with the consent of that agency.

The Act does not apply to lands in any national forest, national park, national monument, or Indian lands or land set aside for the use of Indians; except as amended by the Act of July 1955 (Pub.L. 167), which gives the Secretary of Agriculture the same authority for lands under his jurisdiction as the Secretary of the Interior (30 U.S.C. 601). The purpose of Pub.L. 167 was to provide multiple use of the surface of the same tracts of public lands; thus, mining claims cannot preempt the disposal of timber or the extraction of gravel, for example (43 CFR 3710).

The Act is administered by the U. S. Department of the Interior (DOI) through the Bureau of Land Management, or where appropriate, by the U.S. Department of Agriculture through the U.S. Forest Service. Most of the regulations related to disposal of mineral resources under the Materials Act of 1947 are found in 43 CFR 3600 - 3620. In 43 CFR 3601.1-3, the BLM shall complete an environmental review to ensure that unnecessary or undue degradation is prevented. Disposal actions which are categorically excluded from the NEPA process can be found in DOI manual 516 DM 6, Appendix 5. Disposal will not be approved if the aggregate damage to public lands and resources would exceed the benefits to be derived from the free use of materials. Decisions to authorize disposal of mineral materials shall conform to approved land use plans. Under 43 CFR 1610.5-3, the District

Area Manager of the BLM shall take appropriate measures to make operations and activities under existing permits, contracts, cooperative agreements, or other instruments conform to the approved plan.

The BLM may grant free use permits to any federal agency for periods deemed appropriate, not to exceed ten years. Extensions of the permit may be granted not to exceed one year. There is no limit to the value of materials that may be extracted by a governmental unit if these materials will be used for a public project (43 CFR 3620).

The disposal of timber and other vegetative resources are regulated by the BLM under 43 CFR 5500. Permits may be granted for periods not to exceed six months, and extensions may not exceed three months. Timber must be severed and removed in accordance with sound forestry and conservation practices so as to preserve the scenic, recreational, watershed, and other values of the land. At the end of the cutting, the timber stand must be left in a condition suitable for continuous production. As with mineral permits, permits to governmental units will be issued only if the timber is to be used for a public project.

APPLICABILITY TO DOE/NV ACTIVITIES

The Materials Act of 1947 is applicable to all DOE/NV activities that require the use of mineral or vegetative resources from non-DOE public lands.

PROCESS FOR COMPLIANCE

To comply with the Materials Act of 1947, a DOE/NV contractor or corporate tenant must identify the type of materials needed for the project, the volume of materials needed, and the proposed location for obtaining the materials. An application for a free use permit must be completed and submitted to the DOE/NV for preliminary approval. If the materials are not located on DOE-controlled land, the DOE/NV must demonstrate that it lacks an adequate supply of such materials on its own land. The DOE/NV will then submit the completed application to the authorized official of the BLM. If the site is located on lands withdrawn for the benefit of another government agency, concurrence for disposal of materials must also be obtained from the head of that agency.

Upon issuance of the free use permit, authorized contractors may remove material for the length of time specified by the permit. Permits may be extended for periods not to exceed one year. Permits may be assigned or transferred to other federal or state agencies with the written approval of the authorizing BLM officer.

INFORMATION AND REPORTING REQUIREMENTS

DOE/NV must file an application (Form 5510-1) for a free use permit to the appropriate district office of the BLM. A land use plan must accompany the permit application and must include location, purpose, and amount of materials; methods of extraction; and plans for mitigation of impact during use and for restoration after use.

DOE/NV CONTACTS

The point of contact for more information regarding the Materials Act of 1947 is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

Materials Act of 1947, 30 U.S.C. 601-603.

43 CFR Subpart 1610, Resource Management Planning

43 CFR Group 3000, Subchapter C - Minerals Management.

43 CFR 5500 - 5511 (Timber).

9.3 FLOODPLAIN MANAGEMENT

REGULATORY SUMMARY

Executive Order 11988, "Floodplain Management," was issued by President Jimmy Carter, May 29, 1977, to avoid long and short term adverse impacts associated with occupancy and modification of floodplains and to avoid both direct and indirect support of floodplain development wherever there is a practicable alternative. The order requires all federal agencies to take action to reduce the risk of flood loss; to minimize the impact of floods on human safety, health and welfare; and to

restore and preserve the natural and beneficial values served by floodplains.

Before taking an action, federal agencies must determine whether the proposed action will occur in a floodplain, consider alternatives, and the reasons why the action is to be located in a floodplain. An analysis of the risks shall be made, and public comment shall be sought. Such evaluations shall be incorporated into any NEPA documents being prepared for the action. (See Chapter 2 of this handbook for compliance with NEPA.) Evaluation and public participation are required for actions not under NEPA review.

The term "floodplain" shall mean the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one-percent chance of flooding in any given year. This is also known as the "base flood" or "100-year flood."

Agencies are required to issue regulations and procedures to comply with EO 11988. For DOE, these regulations are codified at 10 CFR 1022, "Compliance with Floodplain/Wetlands Environmental Review Requirements."

APPLICABILITY TO DOE/NV ACTIVITIES

Compliance with EO 11988 is required for all federal and federally supported activities and projects. Specific requirements and compliance actions must be met if activities are planned to take place within a defined 100-year floodplain [see the United States Geological Survey (USGS) floodplain maps for the appropriate area]. Resource Conservation and Recovery Act permits and CERCLA investigations require that the 100-year floodplain be defined in the vicinity of the site under consideration for a waste management facility or remedial action. See Chapter 7 of this handbook for additional information on RCRA and CERCLA compliance.

PROCESS FOR COMPLIANCE

DOE/NV contractors must determine if an activity will impact a floodplain as the first step in meeting the requirements of EO 11988. This extends to normally dry washes in the desert environment, as defined in the EO. If the proposed activities fall within the 100-year

floodplain, alternatives to the proposed location must be evaluated in a floodplain/wetlands assessment as required by 10 CFR 1022.12.

A floodplain/wetlands assessment contains the following sections:

- Project description, which describes the nature and purpose of the proposed action and includes a map;
- Floodplain effects, which describes the positive and negative, direct and indirect, and long- and short-term effects of the proposed action on the floodplain; and
- Alternatives that may avoid adverse effects, including alternative sites, actions, and no action.

For actions for which an environmental assessment or an environmental impact statement is required, the floodplain/wetlands assessment shall be included in the NEPA document. For floodplain/wetlands actions for which neither an EA or EIS is prepared, a separate document shall be issued.

INFORMATION AND REPORTING REQUIREMENTS

If work on the floodplain is required after the DOE/NV has considered alternatives and minimization, DOE/NV must publish a public notice in the Federal Register indicating its intention to use the floodplain.

DOE/NV contractors may commence work only after receiving written authorization from the DOE/NV.

DOE/NV CONTACTS

The point of contact for compliance with EO 11988 and 10 CFR 1022 is the Director, Environment, Safety & Health Division, (702) 295-1433.

REFERENCES

EO 11988, Floodplain Management, May 24, 1977; amended by EO 12148 of July 20, 1979-Federal Emergency Management, 44 FR 43239, July 24, 1979.

10 CFR Part 1022, Compliance with Floodplain/Wetlands Environmental Review Requirements (1995).

9.4 PROTECTION OF WETLANDS

REGULATORY SUMMARY

Issued by President Jimmy Carter on May 24, 1977, EO 11990 requires federal agencies to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The intent of Executive Order 11990, "Protection of Wetlands," is to avoid construction in wetlands if there is a practicable alternative. For purposes of this order, wetlands are defined as areas that are inundated by surface or ground water with a frequency sufficient to support vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Before taking an action, federal agencies must determine whether the proposed action will occur in a wetland, consider alternatives, and consider the reasons why the action is to be located in a wetland. An analysis of the risks shall be made, and public comment shall be sought. Such evaluations shall be incorporated into any NEPA documents being prepared for the action (see Chapter 2 of this handbook). Evaluation and public participation are required for actions not under NEPA review.

Agencies are required to issue regulations and procedures to comply with EO 11990. For the DOE, these regulations are codified at 10 CFR 1022, "Compliance with Floodplain/Wetlands Environmental Review Requirements."

APPLICABILITY TO DOE/NV ACTIVITIES

Compliance with EO 11990 is required for all federal and federally supported activities. A proposed work site should be checked for wetlands prior to commencement of the work. Note that spring discharge areas are considered wetland areas, and must be considered under this EO.

PROCESS FOR COMPLIANCE

Compliance with EO 11990 is normally accomplished through the NEPA process. Before work at a new site begins, it must be determined if the proposed work area will intrude upon or impact a wetlands area in any way. If the proposed activity might impact a wetland, alternatives to the proposed activity must be evaluated in a floodplain/wetlands assessment (10 CFR 1022.12). A floodplain/wetlands assessment contains the following sections:

- Project description, which describes the nature and purpose of the proposed action and includes a map;
- Wetlands effects, which describes the positive and negative, direct and indirect, and long- and short-term effects of the proposed action on the wetlands; and
- Alternatives that may avoid adverse effects, including alternative sites, actions, and no action.

For actions for which an environmental assessment or an environmental impact statement is required, the floodplain/wetlands assessment shall be included in the NEPA document. For floodplain/wetlands actions for which neither an EA or EIS is prepared, a separate document shall be issued.

INFORMATION AND REPORTING REQUIREMENTS

If the contractor or corporate tenant determines that no wetlands area will be impacted, a letter stating this conclusion must be submitted to the DOE/NV for forwarding to appropriate state and federal agencies. With the concurrence that no wetlands area will be impacted, work may begin.

If impacts could occur, and work on the wetland is required after the DOE/NV has considered reasonable alternatives, the DOE/NV must prepare a public notice for publication in the Federal Register indicating its intention to conduct activity in the wetlands area. The proposal will be reviewed by a number of agencies.

DOE/NV CONTACTS

The point of contact for compliance with EO 11990 is the Director, Environment, Safety & Health Division, at (702) 295-1433.

REFERENCES

EO 11990, Protection of Wetlands, May 24, 1977.

*10 CFR Part 1022, Compliance with
Floodplain/Wetlands Environmental Review
Requirements.*

10 MANAGEMENT OF RADIOACTIVE MATERIALS AND RADIOACTIVE WASTES

MANAGEMENT OF RADIOACTIVE MATERIALS AND RADIOACTIVE WASTES

The Atomic Energy Act of 1954 (42 U.S.C. 23) (AEA), and subsequent legislation, led to the creation of both the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE). Under AEA, both the NRC and the DOE were assigned a "self-regulating" status relative to the control and use of radioactive materials and devices and for the management of radioactive waste. Unlike the NRC, which is required to publish its regulations in the Federal Register for eventual codification in the CFR, DOE publishes the great majority of its guidance in the form of DOE orders. This chapter deals with the management of radioactive materials and radioactive wastes at NTS, primarily from the standpoint of the applicable DOE orders.

It should be noted that this chapter does not address the health and safety aspects of dealing with either radioactive materials or radioactive wastes; these are addressed in Subchapter 8.4 of this document.

10.1 MANAGEMENT OF RADIOACTIVE MATERIALS

Under the Atomic Energy Act (1954), three basic definitions were established for regulated radioactive substances. For the purpose of this handbook, the term radioactive materials is used to describe any of the following three types of radioactive substances:

- *Source material* is defined as the feed material introduced in the nuclear fuel cycle. Source material is uranium mill concentrate that is at least 5 percent U_3O_8 by weight.
- *Special Nuclear Material* (SNM) is defined as fissile material such as enriched uranium (^{235}U), ^{233}U , and/or ^{239}Pu .
- *Byproduct material* is defined as any radioactive material (except source or SNM), yielded in, or made radioactive by, exposure to the radiation incident or to the process of producing or utilizing SNM.

REGULATORY SUMMARY

The management of radioactive materials outside of DOE ownership and responsibility is subject to licensing by the NRC and/or its approved agreement states and their responsible regulatory bodies. The possession and use of radioactive materials subject to licensing by the NRC is governed by 10 CFR 0-199, "Nuclear Regulatory Commission." In the state of Nevada the appropriate state regulatory licensing agency is the Health Division of the Department of Human Resources and the applicable NRC licensing agency is NRC Region IV, Walnut Creek Field Office, 1450 Maria Lane, Suite 300, Walnut Creek, CA 94596, telephone (510) 975-0200.

The management of DOE-owned radioactive materials by all DOE departmental elements and contractors is principally governed by two DOE orders: *Management of Nuclear Materials*, DOE 5660.1B (5-26-94) and *Control and Accountability of Nuclear Materials*, DOE 5633.3B (9-7-94).

Order 5660.1B, *Management of Nuclear Materials*, establishes requirements and procedures for the management of DOE-owned nuclear materials. The objective of the Order is to implement a comprehensive DOE nuclear materials management program to:

- Conserve valuable nuclear material resources;
- Distribute nuclear materials needed for DOE and other programs for research, development, and other purposes;
- Optimize nuclear materials production, processing, and inventory management operations; and
- Conduct studies and prepare plans for the future use and disposition of nuclear materials including operation of DOE nuclear materials production, processing, and storage facilities.

Key elements of DOE's nuclear materials management program, are defined in the Order, including:

- Forecasting nuclear material requirements;
- Materials management plans;

- Analytical studies;
- Nuclear materials allotments;
- Nuclear materials inventory management;
- Inactive materials;
- Materials management reviews and appraisals; and
- Miscellaneous activities, including requirements for contractor participation in DOE nuclear materials management.

Order 5633.3B, *Control and Accountability of Nuclear Materials*, prescribes the minimum DOE requirements and procedures for the accountability of nuclear materials at DOE-owned and -leased facilities and DOE-owned nuclear materials at other facilities which are exempt from licensing by the NRC. It is DOE's policy that the nuclear materials subject to the Order shall be controlled and accounted for in a graded manner consistent with the design basis threat and with their strategic and monetary importance. Where applicable, the site-specific safeguards and security planning document will contain the design basis threat requirements specific to each facility. It is DOE's policy that material control and accountability systems will:

- Provide accurate nuclear materials inventory information;
- Control nuclear materials in order to deter and prevent loss or misuse;
- Provide timely and localized detection of unauthorized removals of nuclear materials within specified limits;
- Provide assurance that all nuclear materials are accounted for and that theft/diversion has not occurred; and
- Assist in the prevention of radiological and/or toxicological sabotage involving nuclear materials that could adversely impact national security, the health and safety of employees, the public, or the environment.

Key elements of the Order include:

- Graded nuclear materials safeguards;

- Materials Control and accountability requirements for source and other nuclear materials;
- Loss detection element evaluation;
- Occurrence investigation and reporting;
- Administrative controls;
- Accounting systems;
- Physical inventories;
- Measurements and measurement control;
- Material transfers;
- Material control indicators;
- Documentation and reporting;
- Access controls;
- Material surveillance;
- Material containment; and
- Detection/Assessment.

APPLICABILITY

Radioactive materials are currently used in plutonium experiments at the U1a facility. The management of radioactive materials outside of DOE ownership and responsibility is subject to licensing by the NRC and/or its approved agreement states and their responsible regulatory bodies. The management of DOE-owned radioactive materials is governed by Orders 5660.1B and 5633.3B, except as follows:

- Order 5660.1B does not apply to spent nuclear fuel from the civil sector under the cognizance of the Office of Civilian Radioactive Waste Management or to DOE waste nuclear materials.
- Order 5633.3B does not apply to DOE-owned nuclear materials at Department of Defense or foreign facilities or to DOE facilities, programs, or projects under the cognizance of the Office of Civilian Radioactive Waste Management and subject to NRC or NRC Agreement State regulation.

An additional order, DOE 460.2 (9-27-95), *Departmental Materials Transportation and Packaging Management*, establishes policies and requirements to supplement applicable laws, rules, regulations, and other DOE orders for materials transportation and packaging operations.

PROCESS FOR COMPLIANCE

Compliance with DOE Order 5660.1B, *Management of Nuclear Materials*, is accomplished at the field level under the direction of each cognizant DOE field organization. The primary responsibilities of the DOE field offices with regard to nuclear materials management are program implementation and assessment of nuclear materials under their purview. A sample of specific field office activities includes:

- assurance that contractual agreements contain adequate materials management provisions; contractors receive necessary information, criteria, and guidance; and contractor-prepared inventory assessment reports are accurate and valid,
- nuclear materials inventory forecasting;
- preparation of an annual materials management plan;
- maintenance of an allotment control system;
- identification and proper handling, storage, and/or disposal of inactive and scrap nuclear materials;
- acquisition of nuclear materials only in necessary amounts; and
- financial management of programs.

Compliance with DOE Order 5633.3B, *Control and Accountability of Nuclear Materials*, is accomplished at the field level under the direction of each cognizant DOE field organization. The primary responsibilities of the DOE field offices with regard to control and accountability of nuclear materials are program implementation and accountability for the nuclear materials under their purview. A sample of specific field office activities includes:

- development of a Material Control and Accountability Plan for each facility possessing nuclear materials;

- assurance of cost-effective overall protection at each site;
- maintenance of records and issuance of periodic reports reflecting nuclear materials transactions and inventories under their jurisdiction;
- incorporation of nuclear material control and accountability requirements in all phases of design of new facilities/operations;
- correction of safeguard deficiencies;
- assurance that system assessment requirements are identified and met for facilities possessing nuclear material; and
- management and oversight of contractor activities in accordance with all provisions of the Order.

INFORMATION AND REPORTING REQUIREMENTS

The major information and reporting requirements of DOE Order 5660.1B, *Management of Nuclear Materials*, include:

- Forecast of Nuclear Material Requirements;
- DOE Materials Management Plans;
- Sample Allotment Status Reports; and
- Materials Management Reviews and Appraisals.

The major information and reporting requirements of DOE Order 5633.3B, *Control and Accountability of Nuclear Materials*, include:

- Material control and accountability plans;
- Procedures for the conduct and reporting of nuclear material surveys;
- Reports of malevolent acts and other reportable occurrences; and
- Documentation of nuclear material transactions, inventories, and material balances.

DOE/NV CONTACTS

The point of contact for radioactive materials management at the NTS is the Director, Environment, Safety & Health Division, at (702) 295-1433.

10.2 MANAGEMENT OF RADIOACTIVE WASTES

Radioactive waste is defined as: "Solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act of 1954, ... and of negligible value considering costs of recovery." There are five general types of radioactive wastes: low-level waste (LLW), high-level waste (HLW), transuranic (TRU) waste, byproduct material, and spent nuclear fuel. All of these terms are defined in DOE 5820.2A, Attachment 2. Since NTS deals primarily with LLW, the other waste types are not addressed in this subchapter.

REGULATORY SUMMARY

The term "low-level waste" is actually a catchall phrase for waste that contains radioactivity but is not high-level waste, transuranic waste, spent nuclear fuel, or byproduct material. The DOE/NV generates, characterizes, treats, stores, transports, and disposes of LLW at on-site facilities.

The AEA constitutes the statutory basis for DOE/NV's management of LLW. DOE Order 5820.2A, *Radioactive Waste Management* of 9-26-88, Chapter III, provides the guidance for DOE's management of LLW. The purpose of this chapter is "to establish policies, requirements, and guidelines, for managing [DOE's] solid low-level waste." DOE 5820.2A provides guidance on the following aspects of LLW management (letters in parentheses refer to the applicable subpart of Chapter III.3):

- Performance Objectives (a)
- Performance Assessment (b)
- Waste Generation (c)
- Waste Characterization (d)
- Waste Acceptance Criteria (e)
- Waste Treatment (f)
- Shipment (g)
- Long-Term Storage (h)
- Disposal (i)
- Disposal Site Closure/Post Closure (j)
- Environmental Monitoring (k)

- Quality Assurance (l)
- Records and Reports (m)

APPLICABILITY

Any activity at a DOE/NV site that generates, characterizes, stores, treats, transports, or disposes of LLW is regulated under Chapter III of DOE 5820.2A. Currently LLW waste is generated at the U1a facility in the form of plutonium contaminated cleanup rags, anticontamination clothing. Process knowledge is used to characterize the waste which is transported directly to the Area 3 and/or Area 5 Radioactive Waste Management Sites.

LLW is currently disposed of in the Area 3 and Area 5 Radioactive Waste Management Sites. LLW was disposed of in these sites in the past as well.

PROCESS FOR COMPLIANCE

DOE 5820.2A requires DOE/NV to minimize both the volume and the amount of radioactivity in LLW generated on site. Once LLW is generated, it must be characterized with sufficient accuracy to provide for appropriate segregation, treatment, storage, and disposal (TSD). For LLW shipped from one field organization to another for TSD, characterization is to be done according to both the generator's waste certification program and the waste acceptance criteria of the receiving TSD. The waste acceptance criteria for the NTS is documented in the NTS Waste Acceptance Criteria (revision 0, September 1996).

LLW treatment facilities must be designed, constructed, and operated in accordance with DOE 5820.2A, Chapter III.3.f. LLW must be treated so as to meet the performance objectives of the disposal facility.

Transportation of LLW occurs between field organizations and from off-site generators. Guidance for these activities is located in DOE 5820.2A, Chapter III.3.g and, in the areas of off-site shipment and labeling, also in DOE O 460.2, *Departmental Materials Transportation and Packaging Management*.

Long-term storage, though not specifically defined in the order, is addressed in Chapter III.3.h. As with LLW treatment facilities, those used for long-term LLW storage must be designed, constructed, and operated in accordance with DOE 5820.2A, Chapter III.3.h.

Since DOE/NV owns and operates a LLW disposal facility, DOE 5820.2A is particularly applicable. Chapter III.3.i and j address:

- Performance assessment modeling;
- Consideration of site-specific hydrogeology;
- Disposal of greater-than-class-C LLW;
- NEPA compliance;
- Packaging of LLW for disposal;
- Types and properties of LLW prohibited from disposal (e.g., pyrophoric LLW, LLW capable of detonation);
- Disposal of below regulatory concern wastes;
- Selection and design of disposal sites;
- Design and operation of disposal facilities; and
- Closure and post closure of disposal facilities.

Chapter III.3.k of the order addresses environmental monitoring of LLW TSD facilities (both operational and non-operational). Each facility is required to have an environmental monitoring program to measure effluent releases, radionuclide migration, unit subsidence, and changes in facility and site parameters. Media include both surface and subsurface soil and water (saturated and unsaturated zones), and surface air. The environmental monitoring program should also address the health and safety of both workers and the general public (see Subchapter 8.4 of this document).

INFORMATION AND REPORTING REQUIREMENTS

For purposes of accountability, DOE/NV must track LLW from its generation to its ultimate disposal. DOE 5820.2A, Chapter III.3.m requires the development and maintenance of a recordkeeping system for all LLW generated, treated, stored, transported, or disposed at DOE/NV-owned and -operated facilities.

A prominent aspect of this system is manifesting of LLW from generation through disposal. Manifests must:

- be prepared and accompany each LLW package;
- contain all data necessary to document the proper classification of LLW, and assist in the proper TSD of the LLW; and
- be kept as permanent records.

DOE/NV CONTACTS

For LLW generated, characterized, treated, stored, transported, or disposed at the NTS, DOE/NV has established a tracking system and developed the necessary records and reports. The point of contact for compliance with the LLW portions of DOE Order 5820.2A is the Director of the DOE/NV Waste Management Division at (702) 295-0250.

REFERENCES

Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et. seq.

10 CFR 0 - 199, Chapter I, Nuclear Regulatory Commission

DOE Order 231.1, Environmental, Safety, and Health Reporting (9-30-95)

DOE Order 460.2, Departmental Materials Transportation and Packaging Management (9-27-95).

DOE Order 5000.3D, Telecommunication: Communication Security (9-3-93).

DOE Order 5633.3B, Control and Accountability of Nuclear Materials (9/7/94)

DOE Order 5660.1B, Management of Nuclear Materials (5/26/94).

DOE Order 5820.2A, Radioactive Waste Management, Chapter III, 9/26/88.

NTS Waste Acceptance Criteria, revision 0, September 1996

NTS Waste Acceptance Criteria (revision 0, September 1996).

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APPENDIX A - LIST OF CONTACTS

Additional contacts for various environmental subjects are listed in the following table.

Subject	Contact	Phone Number
Air Pollution - Clark County	Clark County Air Pollution Control Division	(702) 383-1276
Air Pollution - State of Nevada	Nevada Department of Environmental Protection	(702) 687-5065
Hazardous Release Water Pollution - State of Nevada	Nevada Department of Environmental Protection	(800) 992-0900, ext 460 (702) 687-4670
Hazardous Material Spills	Director, Emergency Management Division	(702) 295-1299
Hazardous Material Transportation	Transportation Manager	(702) 295-7444
Low-Level Radioactive Waste	Director, Waste Management Division	(702) 295-0250
Waste Management	Director, Waste Management Division	(702) 295-0250
Waste Minimization and Pollution Prevention	Director, Engineering and Asset Management Division	(702) 295-3424
All Other Subjects	Director, Environment, Safety & Health Division	(702) 295-1433
Occurrence Reporting	Director, Emergency Management Division	(702) 295-6355
Emergency Operations Center	Director, Emergency Management Division	(702) 295-6355
Emergency Reporting-NV	Nevada Emergency Management Division	(702) 687-4202 (702) 687-5300
Emergency Reporting	National Response Center	(800) 424-8802

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APPENDIX B - NEVADA TEST SITE (NTS) REVISED PERMIT STATUS LIST

Permit	Description	Expiration Date	Annual Reporting Required
AIR			
AP9711-0549		02/07/02	02/01
Area 1 Facilities	Shaker Plant Circuit Rotary Dryer Circuit Wet Aggregate Plant Concrete Batch Plant Sandbag Facility Cedar Rapids Screen Shotcrete Hopper/Conveyor Cambilt Conveyor		
Area 3 Facilities	Mud Plant		
Area 5 Facilities	Navy Thermal Treatment Unit		
Area 6 Facilities	Cementing Equip. (Silos) Decontamination Boiler Diesel Fuel Tank Gasoline Fuel Tank Portable Field Bins Portable Stemming System 1 Portable Stemming System 2 Diesel Engines Two-Part Epoxy Batch Plant		
Area 12 Facilities	Area 12 Cafeteria Boiler Area 12 Concrete Batch Plant		
Area 23 Facilities	Building 753 Boiler Cafeteria Boilers (2) Diesel Fuel Tank Gasoline Fuel Tank NTS Surface Disturbances Incinerators (Wackenhut)		
AP9711-0556 ¹	Area 5 HazMat Spill Center	10/20/02	02/01
98-23	NTS Open Burn - Training	10/22/98	None
Non-BN Operated NTS Air Permits			
97-27	Area 27 Open Burning (LLNL)	02/06/98	

¹This permit replaces Air Quality Operating Permit 2625.

ENVIRONMENTAL COMPLIANCE HANDBOOK

Permit	Description	Expiration Date	Annual Reporting Required
BN Operated Off-Site Air Permits			
AP9611-0683	Double Tracks Surface Disturbance	06/12/01	02/01
AP9711-0549	Clean Slates I Env. Rest. Project	04/04/02	
AP9711-0549	Clean Slates II Env. Rest. Project	06/30/02	
DRINKING WATER			
NY-360-12C ²	Area 23	09/30/98	
NY-4098-12NCNT	Area 25	09/30/98	
NY-4099-12C	Area 2, Area 12	09/30/98	
NY-524-12NC	Area 1	09/30/98	
NY-835-12H	NTS (Water Hauler)	09/30/98	
NY-836-12H	NTS (Water Hauler)	09/30/98	
NY-841-12H	NTS (Water Hauler)	09/30/98	
SEPTIC PUMPERS			
*NY-17-03311	Septic Tank Pumper E-104573	11/30/97	
*NY-17-03312	Septic Tank Pumper E-104364	11/30/97	
*NY-17-03313	Septic Tank Pumper E-105293	11/30/97	
*NY-17-03314	Septic Tank Pumper E-105299	11/30/97	
*NY-17-03315	Septic Tank Pumper E-105919	11/30/97	
*NY-17-03317	Septic Tank Pumper E-105918	11/30/97	
*NY-17-03318	Septic Tank Pumper Contractor	11/30/97	
WASTEWATER DISCHARGE			
GNEV93001	NTS General Permit	01/31/99	Qtrly
HAZARDOUS MATERIALS			
13970034X	NTS Hazardous Materials Permit	12/31/97	Annual

²The previous permit for the Area 6 system (NY-5000-12NCNT) was combined with the Area 23 permit (NY-0360-12C) and is now shown as NY-360-12C.

* Renewal Submitted

** New Permit Application Submitted

ENVIRONMENTAL COMPLIANCE HANDBOOK

Permit	Description	Expiration Date	Annual Reporting Required
13970037X	HAZMAT Spill Center Hazardous Materials Permit	12/31/97	Annual
HAZARDOUS WASTE			
NEV HW009	NTS Hazardous Waste Management Permit (RCRA)	05/01/00	Biennial
DISPOSAL SITES			
SW 13 097 02	Area 6 Hydrocarbon Disposal Site	Postclosure	03/07
SW 13 097 03	Area 9 U10c Solid Waste Disposal Site	Postclosure	03/07
**	Area 23 Solid Waste Disposal Site		
SCIENTIFIC COLLECTION			
S14519	Scientific Collection of Wildlife Samples	12/31/97	01/31
OTHER REGULATED FACILITIES			
PCB			
	Area 6 PCB Storage Building		
PESTICIDES			
	Area 23 Pesticide Storage Buildings (2)		

* Renewal Submitted

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