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EMPOWER YOUR COOPERATIVE

Environmental Compliance Guide for the National Rural Electric Cooperative Association

March 1998

Office of Compliance
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
401 M Street, SW (MC 2221-A)
Washington, DC 20460

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In addition, an electronic version of this manual is available via the Internet on the World Wide Web. Downloading instructions are provided on page iii.

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This manual is available on the Internet through the World Wide Web. The *Enviro$ense Communications Network* is a free, public, interagency-supported system operated by EPA's Office of Enforcement and Compliance Assurance and the Office of Research and Development. The Network allows regulators, the regulated community, technical experts, and the general public to share information regarding: pollution prevention and innovative technologies; environmental enforcement and compliance assistance; laws, executive orders, regulations, and policies; points of contact for services and equipment; and other related topics. The Network welcomes receipt of environmental messages, information, and data from any public or private person or organization.

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http://es.epa.gov/oeca/metd/power.html

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http://www.epa.gov/oeca - then select the button labeled Industry and Gov't Sectors and then select Utilities. The manual will be listed.

Direct technical questions to the Feedback function at the bottom of the web page or call Shhonn Taylor at (202) 564-2502

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1. INTRODUCTION

As we move toward the 21st Century, rural electric cooperatives of every size and type are facing increasing pressure to understand the environmental consequences of their various activities. As a rural electric cooperative, you should care about these consequences for several reasons:

- Your facility's use of PCBs, oils, fuels, paints, solvents, pesticides and herbicides, antifreeze, batteries, and/or other chemicals can impact the environment and your workers.
- The costs of non-compliance with the regulations can be high.
- Alternatives to your current ways of doing business exist that could save you money.

The United States Environmental Protection Agency (EPA) and the National Rural Electric Cooperative Association (NRECA) have worked together to create this manual to address environmental issues associated with the non-power generation activities at rural electric cooperatives. We hope you find this manual useful in helping you understand your environmental obligations and comply with the requirements.

1.1 PURPOSE AND SCOPE

This manual is focused on the smaller distribution cooperatives since larger distribution cooperatives and generation and transmission facilities typically have the resources to employ environmental compliance professionals. However, information presented in this manual applies to all cooperatives, including generation and transmission facilities. Statewide associations also may find much of the information in this manual applicable to their activities so they may advise their members effectively.

USEFUL TIP

Typically, larger facilities have developed position papers and policy manuals on ensuring compliance with environmental regulations, and on pollution prevention. Sometimes these cooperatives are willing to provide environmental compliance and pollution prevention assistance to other cooperatives. If you need information or assistance that is not provided in this document, your statewide association, or larger cooperatives in your state might be useful resources.

This manual is designed to provide you with answers to several important questions including:

- How do I comply with the laws and regulations that apply to my facility?
- What pollution prevention options are available for my facility?
- Where can I get additional information?

1.1.1 Complying with Laws and Regulations that Apply to Cooperatives

Many activities at rural electric cooperatives are governed by Federal, State and/or local laws or regulations because those activities generate solid or hazardous wastes or air emissions, or potentially could harm human health or the environment. It is important for you to be aware of, and comply with, all Federal, State and local regulations applicable to your cooperative's activities. These laws and regulations are complex, and numerous, so this task can be challenging.

USEFUL TIP – REGULATIONS VS. LEGISLATION

The various acts discussed in this document (such as the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, etc.) are pieces of **Federal** legislation enacted by Congress. These acts specify a federal agency (such as the U.S. Environmental Protection Agency, or Department of Transportation) to write **Federal** regulations (i.e., laws) to enforce the requirements specified in the act. The environmental regulations are mostly found in Title 40 of the Code of Federal Regulations (abbreviated as 40 CFR), but may be found in other CFR titles, as well. Within each title, the regulations for each act are contained in sections. Throughout this document, the location of a specific regulation will be indicated by the title of the CFR it is located in, followed by the section number or numbers that contain the regulation (i.e., 40 CFR 50 or 40 CFR 50-95).

The first step you should take to meet this challenge is to identify the operations and activities performed at your facility that are governed by Federal, State or local environmental regulations. Table 1-1 lists the majority of these activities. The next step is for you to determine the waste streams generated by each activity, and the laws and regulations that apply to each operation or activity. Table 1-1 lists potential waste streams generated by the associated activity, but keep in mind that not all waste streams listed in Table 1-1 may be generated by the activity as it is performed at your cooperative. Table 1-1 also lists the Federal regulations that may apply to each activity (there may be more than one). It is beyond the scope of this manual to address all of the State and local

Table 1-1. Waste Streams, Regulations and Associated Document Section for Activities and Operations at Rural Electric Cooperatives (regulation acronyms defined at end of table)

ACTIVITY/OPERATION	APPLICABLE REGULATIONS (1)	POTENTIAL WASTE STREAMS GENERATED (2)	ASSOCIATED SECTION OF DOCUMENT
PCB-Contaminated Equipment Overhaul/Repair	TSCA	PCB Waste Hazardous Waste	2, 3
Waste Management	CERCLA RCRA TSCA CAA	Hazardous Waste Air Emissions	3, 5, 12
Vehicle Maintenance	RCRA CAA	Used Oil Solid Waste Hazardous Waste Air Emissions	3, 5, 12
Office Work	RCRA CWA	Solid Waste Sewage	3, 9
Transportation of Hazardous Wastes and Materials	RCRA DOT	none, unless spills occur	4
Vehicle Fueling/Refueling	CAA CERCLA EPCRA	Hazardous Waste (if spills occur) Air Emissions	5, 6, 12
Storage of Hazardous Substances/Products	EPCRA, OSHA	none	6
Spill/Release Response and Cleanup	CAA EPCRA CWA RCRA CERCLA	Solid Waste Hazardous Waste PCB Waste	3, 7
Wastewater Disposal and/or Treatment	CWA	Hazardous Waste Solid Waste Wastewater	8
Storm Water Management	CWA	Storm Water	8
Drinking Water Management and Treatment	CWA SDWA	none	9
Construction	CWA RCRA	Storm Water Solid Waste	8, 10
Pesticide Application and Management	FIFRA RCRA	Air Emissions Hazardous Waste	3, 5, 11
Open Burning	CAA	Air Emissions	12
Short-term Power Generation (when grid is down)	CAA	Air Emissions	12
Asbestos Abatement	CAA OSHA	Waste Asbestos Solid Waste	13

Notes:

1. Acronym Definitions:
   - CAA — Clean Air Act
   - CERCLA — Comprehensive Environmental Response Compensation and Liability Act
   - CWA — Clean Water Act
   - DOT — Department of Transportation
   - EPCRA — Emergency Planning and Community Right-to-Know Act
   - FIFRA — Federal Insecticide, Fungicide and Rodenticide Act
   - OSHA — Occupational Safety and Health Act
   - RCRA — Resource Conservation and Recovery Act
   - SDWA — Safe Drinking Water Act
   - TSCA — Toxic Substances Control Act
2. Your facility may not generate all waste streams listed in this column for the subject activity or operation.

laws and regulations that apply to activities at your cooperative, but it will inform you of the types of State and local regulations that apply. You must contact your State or local regulatory agencies to find out any additional requirements that may apply.

Table 1-1 also will inform you which sections in this manual provide detailed information on how to comply with the regulations and pollution prevention alternatives that could save your cooperative money and time. Use this manual as a starting point, and refer to the Reference sections at the end of each chapter (see Section 1.2) to find out where to get more information on topics presented in the chapter.

1.2 ORGANIZATION

This document consists of thirteen chapters. Chapters two through thirteen each address the regulations and compliance requirements for a specific environmental issue (i.e., PCBs, hazardous waste, managing hazardous products, preparing wastes for transport, spills and emergency response, wastewater, drinking water, wetlands, pesticides, etc.). Each chapter has a references section containing any or all of the following: additional sources of information, tools for compliance (such as checklists), Internet sites, and a references section listing documents that provide more details on the subject area addressed in the chapter. The resources section at the end of this chapter provides addresses and telephone numbers for Regional Offices of the EPA, and state environmental agencies.

1.3 RECOMMENDATIONS FOR POLLUTION PREVENTION TECHNIQUES

Pollution prevention is one of the most cost effective ways to simplify and maintain environmental compliance at your cooperative. Pollution prevention also reduces the potential environmental and human health impacts resulting from your cooperative operations. It can separate a successful cooperative from those burdened with excessive compliance costs and potentially damaging State or Federal fines.

Pollution prevention (sometimes referred to as “P2”), as defined by the U.S. Environmental Protection Agency (EPA), is:

> “...the use of materials, processes or practices that reduce or eliminate the generation of pollutants or wastes at the source.”

Simply put, the use of pollution prevention techniques will reduce or eliminate pollution created by a cooperative operation or activity, rather than controlling pollution at the end of the pipe. Producing less waste has many benefits including:

- Decreased waste management costs
- Decreased raw material costs and energy consumption
- Increased compliance and decreased environmental compliance costs (you'll spend less time assuring compliance)
- Decreased environmental liability
- Increased efficiency and productivity
- Increased worker safety
- Excellent cooperative image.

Throughout the manual, important pollution prevention techniques that may potentially improve your cooperative's compliance and environmental performance will be highlighted. Within each chapter, you may find sections containing expanded P2 information and/or tables summarizing pollution prevention techniques and benefits and waste streams affected by the techniques. Only easy and moderately easy P2 opportunities are presented in this manual. Additional information on pollution prevention, including more challenging opportunities and on-site technical assistance is available from your State and/or local environmental agency. Often these services or materials are provided free of charge.

It is important to remember that not every P2 technique will work at every cooperative. You should experiment with pollution prevention techniques to find those that help you meet your P2 goals without adversely affecting your cooperative operations.

1.4 RESOURCES

1.4.1 EPA Regional Offices

Region I (ME, VT, MA, CT, RI)
Environmental Protection Agency
John F. Kennedy Federal Building
Room 2203
Boston, MA 02203-0001
(617) 565-3420

Region II (NY, NJ, Puerto Rico, Virgin Islands)
Environmental Protection Agency
290 Broadway
New York, NY 10007-1866
(212) 637-3000

Region III (DC, DE, MD, PA, VA, WV)
Environmental Protection Agency
841 Chestnut Building
Philadelphia, PA 19107
(215) 566-5000

Region IV (TN, KY, NC, SC, GA, AL, MS, FL)
Environmental Protection Agency
345 Courtland Street, NE
Atlanta, GA 30365
(404) 3437-4727

Region V (IL, WI, IN, MI, MN, OH)
Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, IL 60604-3507
(312) 353-2000

Region VI (NM, TX, OK, AR, LA)
Environmental Protection Agency
First Interstate Bank Tower at Fountain Place
12th Floor/Suite1200
1445 Ross Avenue
Dallas, TX 75202
(214) 655-6444

Region VII (NE, KS, MO, IA)
Environmental Protection Agency
726 Minnesota Avenue
Kansas City, KS 66101
(913) 551-7000

Region VIII (MT, WY, ND, SD, UT, CO)
Environmental Protection Agency
999 18th Street, Suite 500
Denver, CO 80202-2466
(303) 312-6312

Region IX (CA, NV, AZ, HI, American Samoa, Guam)
Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-1305

Region X (WA, OR, ID, AK)
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101
(206) 553-1200

1.4.2 State Solid and Hazardous Waste Agencies

Alabama
Department of Environmental Management
Land Division - Solid/Hazardous Waste
1751 Federal Drive
Montgomery, AL 36130
(205) 271-7761/7735

Alaska
Department of Environmental Conservation
Environmental Quality Management Section
Solid Waste Management Section
Pouch O
Juneau, AK 99811
(907) 465-2667

Arizona
Department of Health Services
Office of Waste and Quality Management
2005 N. Central Avenue
Phoenix, AZ 85004
(602) 257-2235

Arkansas
Department of Pollution Control and Ecology
Solid Waste Division
P.O. Box 9583
Little Rock, AR 72219
(501) 562-7444

California
Department of Toxic Substance Control
P.O. Box 806
Sacramento, CA 95812-0806
(916) 322-3700

Colorado
Department of Health
Hazardous Materials and Waste Management
4210 E. 11th Avenue
Denver, CO 80220
(303) 331-4830

Connecticut
Department of Environmental Protection
Division of Environmental Quality
Waste Management Unit
State Office Building
165 Capitol Avenue
Hartford, CT 06106
(203) 566-8476

Delaware
Department of Natural Resources and
Environmental Control
Division of Environmental Control
Solid Waste/Hazardous Waste Section
Edward Tatnall Building
P.O. Box 1401
Dover, DE 19901
(302) 736-7812

Delaware Solid Waste Authority
P.O. Box 71
New Castle, DE 19901
(302) 736-5361

District of Columbia
Public Space Maintenance Administration
Bureau of Sanitation Services
Solid Waste Disposal Division
4701 Shepherd Parkway, SW
Washington, DC 20032
(202) 767-8512

Department of Consumer and Regulatory Affairs
Environmental Control Division
Pesticides and Hazardous Waste Section
5010 Overlook Avenue, SW
Washington, DC 20032
(202) 783-3194

Florida
Department of Environmental Regulation
Division of Environmental Programs
2600 Blairstone Road
Tallahassee, FL 32301
(904) 487-1855

Georgia
Department of Natural Resources
Environmental Protection Division
Land Protection Branch
270 Washington Street, SW
Atlanta, GA 30334
(404) 656-2883

Hawaii
Department of Health
Pollution Investigation and Enforcement Division
P.O. Box 3378
Honolulu, HI 96801
(808) 548-6355

Idaho
Department of Health and Welfare
Division of Environment
Bureau of Hazardous Materials
450 W. State Street
Boise, ID 83720
(208) 334-5879

Illinois
Environmental Protection Agency
Land Pollution Control Division
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-6762

Indiana
Office of Solid and Hazardous Waste Management
105 S. Meridian
Indianapolis, IN 46206-6015
(317) 232-4473

Iowa
Department of Natural Resources
Environmental Protection Division
Air Quality and Solid Waste Protection Bureau
Wallace State Office Building
900 E. Grand Avenue
Des Moines, IA 50319

Kansas
Department of Health and Environment
Solid Waste Management Division
Forbes AFB Bldg. No. 740
Topeka, KS 66620
(913) 296-1500

Kentucky

Environmental Protection Department
Division of Waste Management
Ft. Boone Plaza
18 Reilly Road
Frankfort, KY 40601
(502) 564-6716

Louisiana
Department of Environmental Quality
Office of Solid and Hazardous Waste
Solid Waste Division
P.O. Box 44307
Baton Rouge, LA 70804
(504) 342-4677

Maine
Department of Environmental Protection
Bureau of Oil & Hazardous Materials Control
State House Station 17
Augusta, ME 04333
(207) 287-7688

Waste Management Agency
State House Station 154
Augusta, ME 04333
(207) 287-5300

Maryland
Department of the Environment
Hazardous and Solid Waste Mgt. Admin.
2500 Broening Avenue
Baltimore, MD 21224
(301) 631-6400

Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Quality Engineering
Solid and Hazardous Waste Division
1 Winter Street
Boston, MA 02108
(617) 292-5589

Michigan
Department of Natural Resources

Hazardous Waste Division
P.O. Box 30028
Lansing, MI 48909
(517) 373-2730

Department of Natural Resources
Ground Water Quality Division-Solid Waste
P.O. Box 30028
Lansing, MI 48909
(517) 373-2794

Minnesota
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
520 Lafayette Road North
St. Paul, MN 55155
(612) 296-7340

Mississippi
Department of Natural Resources
Bureau of Pollution Control
P.O. Box 10358
Jackson, MS 39209
(601) 961-5171

Missouri
Department of Natural Resources
Division of Environmental Quality
Waste Management Program
Jefferson State Office Building
205 Jackson Street
P.O. Box 176
Missouri Boulevard
Jefferson City, MO 65102
(314) 751-3176

Department of Natural Resources
Division of Environmental Quality
Waste Management Program
Jefferson State Office Building
205 Jefferson Street
P.O. Box 176
Missouri Boulevard
Jefferson City, MO 65102
(314) 751-3176

Montana
Department of Health and Environmental Sciences
Solid Waste Management Bureau
Cogswell Building
Helena, MT 59620
(406) 444-2821

Nebraska
Department of Environmental Control
P.O. Box 94877
State Office Building
Lincoln, NE 68509
(402) 471-2186

Nevada
Department of Conservation and Natural Resources
Division of Environmental Services
Hazardous Waste Bureau/Solid Waste Bureau
Concord, NH 03301
(603) 271-2906
Underground Storage Tanks
(603) 271-3503

New Jersey
Department of Environmental Protection
Solid Waste Division/Hazardous Waste Bureau
401 East State Street
CN402
Trenton, NJ 08625
(609) 292-9120/9877

New Mexico

Health & Environmental Department
Environment Improvement Division
Harold Runnels State Office Bldg.
1190 St. Francis Drive
P.O. Box 968
Santa Fe, NM 87504
(505) 827-2779/2929

New York
Technical Determination Section
Division of Solid and Hazardous Materials
New York Department of Environmental Conservation
50 Wolfe Road, Room 423
Albany, NY 12233
(518) 485-8988

North Carolina
NC Department of Environmental, Health, and Natural Resources
Division of Solid Waste Management/Hazardous Waste Section
P.O. Box 27687
Raleigh, NC 27611
(919) 733-2178

North Dakota
Health Department
Environmental and Waste Management Research Division
1200 Missouri Avenue
Bismark, ND 58505
(701) 224-2382

Ohio
Environmental Protection Agency
Office of Solid and Hazardous Waste
P.O. Box 1049
1800 Watermark Drive
Columbus, OH 43266-0149
(614) 644-2917

Oklahoma
Health Department
Environmental Waste Service
Hazardous Waste Service
P.O. Box 53551
Oklahoma City, OK 73152
(405) 271-5338

Oklahoma Corporation Commission
UST Department
Jim Thorpe Building
Oklahoma City, OK 73109
(405) 521-3107

Oregon
Department of Environmental Quality
Division of Hazardous and Solid Waste
Executive Building
811 SW Sixth Avenue
Portland, OR 97204
(503) 229-5254

Pennsylvania
Department of Environmental Resources
Bureau of Solid Waste Management
Fulton Building
P.O. Box 2063
Harrisburg, PA 17120
(717) 787-9870

Puerto Rico
Environmental Quality Board
Solid and Hazardous Waste Bureau
P.O. Box 11488
Santurce, PR 00910
(809) 725-5140

Rhode Island
Department of Environmental Management
Air and Hazardous Materials
291 Promenade Street
Providence, RI 02908
(401) 277-2797

South Carolina
Board of Health and Environmental Control
Bureau of Solid and Hazardous Waste
2600 Bull Street
Columbia, SC 29201
(803) 734-5200

South Dakota
Department of Water and Natural Resources
Environmental Health Division
Joe Foss Building
Pierre, SD 57501
(605) 773-3329

Tennessee
Department of Public Health
Bureau of Environmental Health Services
Solid Waste Management Division
Cordell Hull Building
Nashville, TN 37129
(615) 741-3424

Texas
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, TX 78711
(512) 463-7760

Department of Health
Bureau of Solid Waste
1100 W. 49th Street
Austin, TX 78756
(512) 458-7271

Utah
Department of Health Division of Environmental Health
Bureau of Solid and Hazardous Waste
P.O. Box 16690
288 North 1460 West
Salt Lake City, UT 84116-0690
(801) 538-6170

Vermont
Agency of Natural Resources
Waste Management Division
103 S. Main Street
Waterbury, VT 05676
(802) 244-8702

Virginia
Department of Waste Management
101 N. Fourteenth Street
Monroe Building, 11th Floor
Richmond, VA 23219
(804) 225-2667

Washington
Department of Ecology
Solid and Hazardous Waste Program
Mail Stop IV-11
Olympia, WA 98504-8711
(206) 459-6316

West Virginia
Department of Natural Resources
1201 Greenbriar Street
Charleston, WV 25311
(304) 348-5935

Wisconsin
Department of Natural Resources
Bureau of Solid Waste Management
101 S. Webster Street
Madison, WI 53707
(608) 266-1327

Wyoming
Department of Environmental Quality
Solid Waste Management Program
122 W. 25th Street
Cheyenne, WY 82002
(307) 777-7752

2. HOW DO I MANAGE MY PCB EQUIPMENT?

The electric transmission equipment your cooperative owns and maintains may contain polychlorinated biphenyls (PCBs). PCBs belong to a broad family of man-made organic chemicals known as chlorinated hydrocarbons. PCBs were manufactured approximately from 1932 to 1978.

RESOURCES

This chapter contains some technical language which may be unfamiliar to your. To familiarize you with the terms used, a list of definitions is included in Section 2.7.

Chemical properties of PCBs

PCBs can vary in toxicity, and can range in consistency from thin light-colored liquids to yellow or black waxy solids. Due to chemical properties of PCBs, such as low flammability, high chemical stability, high boiling point, and low electrical conductivity, they have been widely used in electrical equipment such as transformers and capacitors, and in hydraulic and heat transfer systems.

Most likely you know that PCBs and PCB-containing equipment are strictly regulated by EPA and your state. As the owner of this equipment it is your responsibility to manage your PCBs and PCB-equipment as specified in the regulations. This chapter provides a summary of the Federal PCB management requirements. It is organized to answer a number of questions about PCBs and their management, including:

- How and why are PCBs regulated?
- Do the PCB regulations apply to me, and if so, how do I comply with them?
- How do I manage my PCB equipment?

Not all PCB regulations are covered

The aim of this chapter is to give you a basic understanding of how the PCB regulations apply to your cooperative. However, it is not a complete description of all regulations that may apply to you because it does not present other Federal requirements, such as Superfund PCB requirements, which may apply to your cooperative if there have been PCB releases to the environment

USEFUL TIP

Under the Superfund law, PCBs can become regulated substances if they are detectable in the environment at any level. This is an issue for cooperatives with respect to PCB disposal methods (see Section 2.4.8) and leaks and spills (see Section 2.4.9).

from your cooperative (see box). This chapter also does not include any State requirements, which may be more strict than the federal requirements. To become familiar with your State's requirements consult your State environmental protection/natural resources agency.

2.1 HOW ARE PCBs REGULATED?

In 1976 Congress passed the Toxic Substances Control Act (TSCA) which effectively banned further manufacture, processing, distribution in commerce and use of PCBs, except in a totally enclosed manner. TSCA allows EPA to authorize certain uses of PCBs. Congress assigned EPA the task of enforcing TSCA. EPA developed a series of regulations which govern the use, marking, storage, recordkeeping, and disposal of PCBs. These regulations are published in the Code of Federal Regulations (40 CFR Part 761).

RESOURCES

For additional detail on the PCB regulations presented in this chapter, you can consult the PCB rules themselves. To get a copy of these rules, you may call the EPA TSCA Hotline at (202) 554-1404 or Dick Sternberg at NRECA at (703) 907-5824. You can also get a copy of a PCB Q & A Manual by calling the hotline.

PCB rules are being amended

EPA is in the process of amending the PCB rules, and the amendments may be final by the end of July 1998. The amendments establish prohibitions and requirements for the manufacture, processing, and distribution of PCBs and PCB items. Copies of the amended rules will be available from the TSCA hotline (see box above).

2.2 WHY WERE PCBs REGULATED?

PCBs are toxins

Action was taken to regulate PCBs because they were found to present an unreasonable risk to human health and the environment. PCBs can be ingested, inhaled or absorbed through the skin. Once in the body, they are suspected of causing cancer, and liver, reproductive, and developmental defects. High concentrations of PCBs also are known to cause a painful and disfiguring skin condition called chloracne.

PCBs are worldwide pollutants

Since PCBs are one of the most stable compounds known, they are also one of the most widespread pollutants. If released into the environment, PCBs sometimes enter the food chain and tend to accumulate in the fatty tissues of organisms. PCBs have been found all over the world in many species of fish, birds, and other animals including humans. Fish that live and feed in PCB contaminated waters, have PCB levels many times

higher than the PCB level of the water. Birds that feed off these fish have an even higher concentration of PCBs in their tissues than the fish. In this way, the levels of PCBs can increase up the food chain, potentially exposing humans to very high levels of the toxic PCBs.

In addition, if PCBs burn, harmful chemicals such as dioxins and dibenzofurans can be created and released into the environment. These chemicals are believed to be even more toxic than PCBs themselves and have been found to cause cancer, as well as reproductive and developmental defects.

2.3 DO THE PCB REGULATIONS APPLY TO ME?

USEFUL TIP

Some states have set the regulatory limit lower than 50 ppm; check with your State.

The PCB regulations address three areas related to PCBs: electrical equipment contining PCBs in their dielectric fluid, liquids containing PCBs, and spills of PCB liquids. The PCB concentration in a piece of equipment's dielectric fluid or in stored fluid (used for servicing) determines which regulations will apply. If your cooperative owns any electrical equipment that contains PCBs in the dielectric fluid at concentrations of 50 parts per million (ppm) or greater, or if your cooperative owns, uses, or disposes of liquids containing PCBs at concentrations greater than 50 ppm, the regulations apply to you. Also, if your cooperative has had spills of liquids containing any amount of PCBs, the regulations will apply to you.

50 ppm PCBs is regulatory limit

The following sections explain the regulatory classifications of electrical equipment containing PCBs, and of liquids containing PCBs. Section 2.4 explains the various regulations for your equipment and stored fluid. Section 2.5 explains regulations applied to spills of liquids containing PCBs.

2.3.1 Electrical Equipment Containing PCBs

The regulations classify electrical equipment containing PCBs in the dielectric fluid as follows:

Classifications of PCB equipment

- ***PCB***—Electrical equipment that contains dielectric fluid with a PCB concentration of 500 ppm or greater. For example, a transformer that contains 500 or more ppm PCBs in the dielectric fluid is a "PCB transformer".
- ***PCB-contaminated***—Electrical equipment that contains dielectric fluid with a PCB concentration of 50 ppm but less than 500 ppm. For example, a transformer that contains between 50

and 499 ppm PCBs in the dielectric fluid is a "PCB-contaminated" transformer.

- ***Non-PCB***—Electrical equipment that contains dielectric fluid with a PCB concentration less than 50 ppm. For example, a transformer that contains less than 50 ppm PCBs in the dielectric fluid is a "non-PCB" transformer, and falls outside the regulations for electrical equipment.

Please note that you cannot change the PCB concentration of a piece of equipment such as a transformer unless you follow the reclassification requirements in the rules (see box). These are presented in Section 2.4.6.

USEFUL TIP

You cannot change the PCB concentration in oil by diluting it with oil of a lower PCB concentration or oil without PCBs. The entire mixture would have to be regarded as having the higher concentration of PCBs.

2.3.2 Liquids Containing PCBs

Classifications of PCB liquids

The regulations classify liquids containing PCBs (e.g., liquids that are not in use in electrical equipment) in the following way:

- ***PCB***—Liquid that contains 50 ppm or greater is considered to be PCB.

- ***Non-PCB***—Liquid that contains less than 50 ppm is considered non-PCB. Please note that if non-PCB liquid is spilled, it is still subject to TSCA spill requirements (See Section 2.3.3).

- ***Non-Detectable***—Liquid with a concentration of less than 2 ppm of PCB is non-detectable.

Please note that under the regulations there is no *PCB-contaminated* category for oil. The PCB-contaminated category only applies to electrical equipment.

2.3.3 Spill Material

Spills of liquids containing ***any amount*** of PCBs are subject to TSCA regulations. If the spill reaches the environment, then Superfund regulations apply as well, and your cooperative may be liable for environmental damage. (For details on spill clean up requirements for PCB liquids, see Section 2.5 and Chapter 7.)

2.4 HOW DO I MANAGE EQUIPMENT AND STORED FLUIDS CONTAINING PCBS?

This section provides information on how to service, label, inspect, reclassify, store, and dispose of equipment containing more than 50 ppm of PCBs in the dielectric fluid, and how to store, label, and inspect fluids containing more than 50 ppm PCBs used for servicing or reclassifying these types of equipment. The types of equipment discussed in this section include transformers and their bushings, capacitors, reclosers, regulators, electric light ballasts, and oil switches. Since the regulations for managing equipment and stored fluid containing PCBs vary depending on the concentration of PCBs in the dielectric fluid, it is important to determine this concentration.

2.4.1 How Do I Tell Whether My Equipment Contains PCBs and the PCB Concentration?

The first step in determining whether your equipment contains PCBs (and the concentration of PCBs in the dielectric fluid) is to look at the metal nameplate permanently affixed to the unit by the manufacturer (i.e., not removable stickers put on equipment by your cooperative).

How manufacturers label equipment

Manufacturers have been prohibited from using PCBs when they manufacture electrical equipment since 1979. So any item of electrical equipment manufactured since then should not contain PCBs, so long as it has not been serviced with PCB containing oil. Also, since the mid 1980s, manufacturers have been required to put information on nameplates or otherwise permanently label equipment to indicate the item does not contain PCBs. Labels or nameplates on capacitors and transformers may say "does not contain PCBs," "No PCBs," "PCB free," "contains no PCBs," "contains less than 1 ppm PCBs," etc. As long as the item having such a label has never been serviced with dielectric fluid containing PCBs, it should not fall under the regulations. Use the maintenance records for the equipment to verify it has not been serviced with PCB-containing fluid.

USEFUL TIP

The term "non-PCB" on the nameplate of a transformer probably only means the oil contains less than 50 ppm, so this statement cannot be relied on to show the transformer or capacitor does not contain any PCBs.

Look at the nameplate

The nameplate on transformers or capacitors may state the type of dielectric fluid contained in the item. If the equipment is mineral oil-filled,

it will usually indicate the gallons of oil present in the item, and may indicate the type of oil. Mineral oil-filled equipment typically does not contain PCBs, but some equipment may sometimes have small concentrations of PCBs that were inadvertently introduced into the equipment during the manufacturing process.

Items manufactured with high concentration PCBs

Transformers and capacitors also may intentionally have been manufactured with substances which have very high concentrations of PCBs. These high-concentration PCB substances were manufactured under several different trade names. Tables 2-1 and 2-2 list PCB fluid names for various manufacturers of transformers and capacitors containing high concentrations of PCBs. If the nameplate on the transformer or capacitor has one of the names on Tables 2-1 or 2-2, you must assume the item is a PCB transformer or capacitor (i.e., it has 500 ppm or greater PCBs in the dielectric fluid). The lack of one of these trade names on a nameplate is not a guarantee that the equipment does not contain high concentrations of PCBs. You will need to review maintenance records (see box) if they are available to see if the item was serviced with dielectric fluid which contained high concentrations of PCBs.

USEFUL TIP

Keep your maintenance records up to date and accurate. Without these records, you cannot document the PCB content of your electrical equipment.

How an item can be determined non-PCB

If the label or nameplate does not indicate whether the item contains PCBs, you might be able to call the manufacturer with the make, model and serial number of the item. If the manufacturer indicates the item was not manufactured with PCB-containing dielectric fluid, and your maintenance records show it was not serviced with PCB-containing dielectric fluid, the unit can be considered non-PCB.

How Do I Determine the PCB Concentration of My Equipment?

If a piece of equipment is not marked by the manufacturer with the PCB content, and no further information is known (as discussed above), you must either test the dielectric fluid, or assume it contains PCBs and manage the item according to the regulations summarized in Sections

Table 2-1. PCB Fluid Names for Various Makes of Transformers

PCB TRANSFORMER MANUFACTURERS	PCB FLUID NAMES
Allis-Chalmers	Chlorextol
American Corporation	Asbestol
ESCO Manufacturing Co.	Askarel
Ferranti-Packard Ltd.	
Hevi-Duty Electric	
Research-Cottrell	
General Electric	Pyranol
ITE Circuit Breaker Co.	Non-Flammable Liquid
Kulman Electric	Saf-T-Kul
Monsanto (fluid only)	Aroclor
Niagara Transformer Corp.	Askarel, EEC-lB
Power Zone Transformer	EEC-l8
Wagner Electric	No-Flamol
Westinghouse	Inerteen, Nepolin, Dykanol
Electro-Engineering Works	various fluid names
Envirotech Buell	
H.K. Porter	
Helena Corp.	
Maloney Electric	
Standard Transformer Corp.	
Uptegraff Manufacturing Co.	
Van Tran Electric	

Table 2-2. PCB Fluid Names for Various Makes of Capacitors

PCB CAPACITOR MANUFACTURERS	PCB FLUID NAMES
Aerovox	Hyvo1
Cornell Dubiller	Dykano1
Electrical Utilities Corporation	Eucarel
General Electric	Pyranol
Jard Corporation	Clorphen
McGraw Edison	Elemex
Monsanto (fluid only)	Aroclor, Capacitor 21, MCS 1489
P.R. Mallory & Company	Aroclor B
Sangamo Electric Company	Diaclor
Sprague Electric Company	Clorinol
Universal Manufacturing Corporation	Askarel
Westinghouse	Inerteen
Axel Electronics	various fluid names
Capacitor Specialists	
Electromagnetic Filter Company	
R.F. Interonics	
Tobe Deutschmann	
York Electronics	

Assumption rule

2.4.2 through 2.5. If you do not know the PCB concentration of an item, you must assume it is either PCB (having 500 ppm PCB or greater in the fluid) or PCB-contaminated (having 50 to 499 ppm PCB in the fluid). This is called the assumption rule. The assumption rule varies for each type of equipment. The following summarizes the assumption rule for the equipment discussed in this chapter:

- Transformers and capacitors for which no information (i.e., transformer with no nameplate and cap) is known, must be assumed to be PCB.
- Transformers that have mineral oil dielectric fluid and for which no further information is available must be assumed to be PCB-contaminated.
- Switches, voltage regulators, and fluorescent light ballasts for which no information is known must be assumed to be PCB-contaminated.
- Circuit breakers and reclosers for which no information is known may be assumed to be non-PCB.

Consider testing transformers

For power transformers and voltage regulators that have built-in sampling ports, it may be worth the cost of having the dielectric fluid in the unit tested by an analytical laboratory. The reason for this is that the requirements for managing these large PCB units can be significant and cumbersome (see Section 2.4.2 for details), and these types of units have a high risk if they fail because of the volume of fluid they contain. In addition, requirements for disposal vary depending on the PCB concentration in the dielectric fluid (see Section 2.4.8). Sealed equipment (capacitors, fluorescent light ballasts, oil circuit breakers and reclosers) cannot be tested until they leak or are taken out of service for disposal. However, for purposes of disposal, it might be economically worthwhile to test sealed units once they leak or are taken out of service for disposal. Many dispose of these items as PCB waste rather than testing - which could be an added expense if the unit is non-PCB.

USEFUL TIP

It is not recommended to test pole transformers while they are in service because this requires drilling a hole to remove the fluid. Drilling a hole can introduce metal filings into the unit (which can cause catastropic failure), or can allow moisture to penetrate the unit (which can cause chronic failure). When a pole transformer is removed for maintenance or repair, the facility your cooperative sends the transformer to will automatically test the unit as part of the repair or maintenance activity.

Laboratory testing procedures

For testing of the dielectric fluid, EPA recommends that gas chromatography (GC) analysis be performed by a laboratory on samples from any of the openable or sealed units described above. If you are collecting the samples, before you submit them to the laboratory, you should establish sampling procedures that are accurate, reproducible, and assure quality control (see box). If you follow these recommendations, you can rely on the results of a GC analysis. Keep the test result report you receive from the laboratory (or the maintenance facility) with the maintenance records for the piece of equipment so you know the proper type of fluid for refilling it, and can prove the PCB concentration of the unit.

RESOURCE

The EPA Methods Information Communication Exchange (MICE) support line (run by EPA's Office of Solid Waste) will assist you in developing sampling procedures (for your dielectric fluid) that will assure EPA will accept your sample results. This support line is menu-driven, and you must leave a message for a technical expert to return your call. The telephone number for the MICE line is (703) 821-4690.

2.4.2 Use Requirements for Specific Equipment Types

This section presents specific requirements (including labeling, inspection, reclassification, storage and disposal) for using the most common types of electrical equipment used by cooperatives.

USEFUL TIP

TSCA does not contain requirements for non-PCB equipment, but it is recommended that they be managed similar to PCB-contaminated equipment because of the stringent requirements for spills of any liquids containing more than 2 ppm PCBs.

PCB-contaminated Transformers and Capacitors

Requirements for PCB-contaminated transformers and capacitors

The requirements for handling PCB-contaminated (50–499 ppm PCBs) transformers and capacitors are not as numerous or stringent as those for PCB transformers and capacitors. Specific use requirements for PCB-contaminated transformers and capacitors are as follows:

- Owners must follow the transformer servicing requirements (discussed in Section 2.4.5) as they apply to PCB-contaminated units. Since capacitors are sealed units, they do not have servicing requirements.

- Transformers and transformers capacitors must be intact and not leaking.

- Leaking transformers must be repaired or replaced, and leaking capacitors or transformer bushings (see below for discussion on brushings) must be disposed. Until appropriate repair and cleanup are completed, any active leak must be contained, daily inspections must be done, and a written record of the inspections must be made (see Section 2.4.4). An example of a leaking item inspection log is provided in Section 2.6.6.

- Any PCBs which leak or seep from a PCB-contaminated transformer or capacitor must be properly cleaned up (see Section 2.5 and Chapter 7 for spill cleanup information). All contaminated cleanup materials must be disposed as PCB waste (see Section 2.4.8). Cleanup of PCBs must be initiated promptly, and in no case later than 48 hours after discovery of the leak.

PCB-contaminated capacitors and transformers can be used for the entirety of their useful lives.

PCB Transformers and Capacitors

Additional requirements for PCB transformers and capacitors

If you have a PCB transformer or capacitor (500 ppm or greater), you must comply with all of the requirements discussed above for PCB-contaminated units, plus a number of additonal requirements. These additional requirements are summarized below.

- Mark transformers and all access to them. Marking requirements are provided in Section 2.4.3.

- Inspect each transformer or capacitor once per quarter and keep records of the inspections (unless the item meets requirements in the rules for yearly inspections). An example inspection record is provided in Section 2.6.6, and inspection requirements are provided in Section 2.4.4.

- You may not use PCB transformers in any area which poses an exposure risk to food or feed. This means that if your transformer leaked or spilled, and the PCBs could get to the food or feed, you may not use the transformer in that area.

Check your customer list to ensure that there are no PCB transformers that pose an exposure risk to food or feed.

- Do not use a PCB transformer with secondary voltages equal to or greater than 480 volts in or near a commercial building. There are restrictions on use of lower voltage PCB transformers in or near commercial buildings as well.

- Register each PCB transformer in writing with your local fire department if it is in use or stored for reuse (an example registration form is provided in Section 2.6.6). The registration includes the physical location, principal constituent of the dielectric fluid (PCBs, mineral oil, etc.), contact person and phone number. Each PCB transformer in or near a commercial building must also be registered with the building owner.

- Comply with servicing conditions detailed in Section 2.4.5.

- Comply with spill/leak requirements discussed above, and detailed in Section 2.5.

WHAT DO I DO IF I DISCOVER I HAVE A PCB TRANSFORMER?

If you test your transformer dielectric fluid which has been assumed to contain 50-499 ppm PCBs, and find out that it in fact contains 500 ppm PCBs or greater (i.e., is a PCB transformer), you must either label the unit and send it for disposal (see Section 2.4.8) or do the following to get the transformer into compliance:

- Report any fire related incidents involving the PCB transformer immediately to the National Response Center (see Section 2.5).
- Mark the transformer and access to the transformer within 7 days (see Section 2.4.3).
- Register the PCB transformer with the Fire Department within 30 days (see example form in Section 2.6.6 and discussion in Section 2.5).
- If the PCB transformer is in or near a commercial building, register it with the building owner within 30 days (see example form in Section 2.6.6).
- Come into compliance with the enhanced electrical protection requirements in the rules within 18 months of discovery.
- Comply with the rest of the rules (summarized in this document) which apply to PCB transformers.

These requirements can be found in the regulations at 40 CFR Part 761.30(a)(1)(xv).

Bushings

Bushings are part of the transformer, regardless of type of oil in them.

Bushings on transformers are considered by EPA to be part of the transformer because they have been in contact with the dielectric fluid in the transformer, and because the regulations assume that an intact transformer contains the component parts necessary for tansformer operations. Thus, unless you can prove otherwise (i.e., by wipe sampling the exterior of the bushing), regardless of the type of dielectric fluid in the bushing, if it is from a PCB transformer, it is considered PCB, and if it is from a PCB-contaminated transformer, it is considered PCB-contaminated.

Determine the classification of oil-filled bushings during maintenance or repair.

When bushings are removed from a transformer as part of maintenance and repair of the unit, the shop will evaluate the capability of the bushing to be reused on the unit. Regardless of classification of the bushing, it can be reused if suitable. However, it is important to note that bushings from non-PCB power transformers may be filled with PCB dielectric fluid. Therefore, it is important to determine the classification of bushings from non-PCB power transformers. To test an oil-filled bushing, a sample of the dielectric fluid from the unit may be collected by loosening or removing the endcap and gasket from the bushing.

Caution on reuse of PCB bushings

If an oil-filled PCB bushing fails while in service, the oil leaked (as a result of the failure) most likely will contaminate the transformer it is attached to (i.e., a non-PCB transformer would then become a PCB transformer), and the failure will be considered a PCB spill. Thus, your cooperative could be at a high risk of financial liability for a PCB spill if PCB bushings are reused. It is recommended that you determine the classification of oil-filled bushings on your non-PCB transformers when they have been removed from service (see above). PCB bushings on non-PCB transformers should be replaced, and the PCB-bushing disposed.

Storage and disposal of bushings

The storage and disposal of bushings is the same as for other PCB, PCB-contaminated, or non-PCB articles. As discussed above, any oil-filled bushing must be assumed PCB for disposal purposes, and any bushing from a PCB or PCB-contaminated transformer must be classified the same, regardless of the type of oil in an oil-filled unit, unless the exterior is sampled and found not to be contaminated with PCBs.

Oil Switches and Voltage Regulators

Voltage regulators and switches are used to control, transmit and distribute electric power efficiently. Although most of the equipment is mineral oil-filled and was not designed to contain PCBs, dielectric fluid in

them may have become contaminated with PCBs through past maintenance and servicing activities. In addition, voltage regulators are particularly susceptible to PCB contamination as they often contain a small PCB starter capacitor which easily contaminates the regulator's mineral oil dielectric fluid if it ruptures or leaks. PCB and PCB-contaminated switches and voltage regulators may be used for the entirety of their useful lives.

Electrical Light Ballasts

An electric light ballast is the primary component of fluorescent light fixtures. These items generally are located within the fixture under a metal cover plate. The function of a ballast is to accumulate and hold a charge of electricity.

A ballast unit typically is composed of a transformer to reduce the incoming voltage, a small capacitor (containing 0.1 kg (0.2 lb) or less of dielectric fluid), and, possibly, a thermal cut-off switch and/or safety fuse. The components of the ballast are surrounded by a tar-like substance that is designed to muffle the noise that is inherent in the operation of a ballast. Ballasts also contain potting material to absorb the dielectric fluid, should the capacitor fail.

USEFUL TIP

It is not recommended that you try to repair a failed ballast because of the risk of releasing PCBs on opening the unit.

Capacitors in ballasts may contain PCBs in the dielectric fluid. According to EPA, all small capacitor light ballasts manufactured through 1979 contain PCBs (EPA 1992). There would be approximately 1 to 1½ ounces of PCBs in each capacitor. Ballasts manufactured after 1979 that do not contain PCBs are labeled "No PCBs." **If a ballast containing PCBs fails, the capacitor may break, contaminating the surrounding tarry material and the potting material.**

Ballasts may contain PCBs. Handle them carefully.

It is crucial to find out if a ballast containing PCBs is leaking before it is removed from the fixture, so that it can be handled appropriately. If a PCB ballast has been punctured or damaged, the oily tar-like substance may be oozing out of the unit. If your ballast appears to be leaking, the ballast and all materials it contacts are considered PCB waste and must be disposed of according to the regulations (discussed in Section 2.4.8). It is important that you remove, handle and dispose of PCB-containing ballasts properly to prevent exposure to the leaking ballasts. All materials

that contact the ballast or the leaking substance are also considered PCB waste.

Circuit Breakers and Reclosers

Circuit breakers and reclosers are types of sealed oil-filled electrical equipment generally not designed to contain PCBs. However, a small percentage of this electrical equipment does contain PCBs as a result of the manufacturing process. Because most reclosers were manufactured without PCBs, they may be assumed to be non-PCB (see Section 2.4.1).

PCB and PCB-contaminated circuit breakers and reclosers may be used for the entirety of their active lives. Circuit breakers and reclosers containing PCBs may be stored for reuse for an unlimited amount of time, as long as they are in a condition suitable for reuse.

2.4.3 What PCB Equipment Must Be Marked?

USEFUL TIP

EPA calls PCB labels "marks." Thus, you must "mark" your PCB transformers and capacitors.

PCB transformers or capacitors (500 ppm or above) must be marked with the appropriate PCB label (see box). Marking of voltage regulators, circuit breakers, switches, and reclosers is not required (see EPA Q&A Manual, 1994). Marking of PCB-contaminated equipment of any kind is not required. Rules for marking can be found at 40 CFR Section 761.40.

How and When Do I Use the Labels?

PCB transformers and capacitors are marked with a large PCB label or a small PCB label depending on the size of the transformer. The large PCB label is called the M_L mark. The small PCB label is called the M_S mark. All PCB labels must be clearly visible.

The large PCB mark (Figure 2-1) typically is 6 × 6 inches, but may be reduced to 2 × 2 inches if space is limited. It should be used if it will fit

Figure 2-1. Large PCB Mark

on the equipment. It also should be used to mark drums and areas where PCBs are being stored.

The small PCB mark (Figure 2-2), typically 1 × 2 inches, may be used when the large PCB label will not fit on the PCB equipment.

What Must Be Marked?

What to mark

The following items must be marked with the appropriate PCB label:

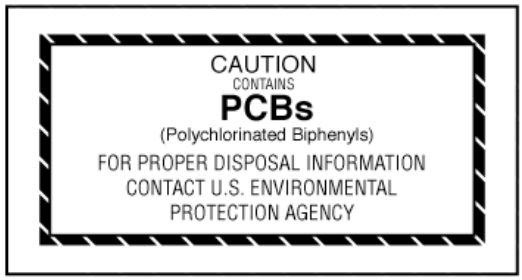

Figure 2-2. Small PCB Mark

- PCB transformers (500 ppm or greater).
- Large PCB capacitors (contain 3 lbs. or more of dielectric fluid) with operating voltages greater than or equal to 2,000 volts (i.e., "high voltage" capacitors).
- The pole or structure holding any large, high-voltage PCB capacitor, or any fence if the high voltage PCB capacitor is behind it.
- Equipment containing a PCB transformer or large, high-voltage PCB capacitor.
- Large, low-voltage PCB capacitors, at the time of removal from service for disposal.
- Drums of PCB oil, debris, etc. (50 ppm or greater).
- Vehicles used to transport more than 99.4 lbs. of oil containing PCBs or one or more PCB transformers.

Access must be marked.

To warn employees and fire/emergency response personnel that PCB equipment is present, the access to each PCB transformer and capacitor also must be marked with the PCB M_L mark. "Access" means the vault door, room door, fence, archway, hallway, etc., but does not include grates or manhole covers. Markings should be placed in such a way that a person approaching the area can see the label before entering the actual area.

2.4.4 Inspection Requirements

POLLUTION PREVENTION TIP

The benefits of regular inspections increase by conducting them more frequently than the regulations require.

Inspections are required for most items containing PCBs, and should be considered part of the maintenance procedures for those items. While the regular inspection of items containing PCBs will not reduce the occurrence of leaks, they will ensure that leaks and other faults are discovered in a timely manner and can be repaired immediately before any environmental damage occurs. Table 2-3 presents the items that must be routinely inspected for leaks and the required frequency of inspection for each item.

Table 2-3. Routine Inspection Frequency

Item	Inspection Frequency
PCB Transformers	Required quarterly; annually if PCB concentration in dielectric fluid is less than 60,000 ppm and/or transformer(s) have secondary containment.
PCB Capacitors	Recommended annually
PCBs and PCB fluids (>50 ppm) in storage for use in servicing equipment	Required monthly
PCB and PCB-contaminated switches and voltage regulators	Recommended quarterly. PCB (500 ppm or greater) items must be inspected weekly when near food or feed. Items in use in non- food or feed areas do not require recorded inspections, but these are recommended.
PCB items stored for reuse	Same as if item is in-service
Items in storage for disposal facility	Required every thirty days

Written inspection records required

A written record of all inspections must be made (except for voltage regulators and switches in use in non-food and feed areas, and written inspections for these are highly recommended). Examples of inspection reports are provided in Section 2.6.6. At a minimum, records of inspections must contain the following information:

- Location of the item.
- Date of each inspection.
- Name of person performing inspection.
- Date on which any leak is discovered.

Inspecting leaking items

Any item in storage or service that has a leak must be inspected daily from the time the leak is detected until the leak is repaired. An example of a leaking item inspection report is provided in Section 2.6.6. At a minimum, the leak inspection record must include:

- Location of leak(s) (e.g. exactly what point of an item is leaking).
- Estimate of amount of fluid released.
- Date of cleanup, containment, repair, or replacement.
- A description of any cleanup, containment, or repair performed.
- The results of any containment and daily inspection required for uncorrected active leaks.

Any leaks must be cleaned up promptly, and in no case later than 48 hours after discovery of the leak.

Written records of inspections and the maintenance history must be maintained and made available for inspection upon request by EPA until at least three years after that particular article is disposed (based on the date on the certificate of destruction).

2.4.5 Servicing Requirements

Types of fluid for servicing equipment

Servicing activities include draining and refilling, topping off, repairing and retrofilling for reclassification. PCB equipment may be serviced (including topping off) with dielectric fluid at any PCB concentration. PCB-contaminated equipment may be serviced only with dielectric fluid containing less than 500 ppm PCB. Although it is not required, PCB equipment (other than Askarel-type transformers) and PCB-contaminated equipment should be topped off and serviced with dielectric fluid containing no PCBs. **Service non-PCB items only with non-PCB dielectric fluid.**

USEFUL TIP

Any servicing (including rebuilding) of PCB transformers, switches or voltage regulators that requires the removal of the coil from the casing is prohibited.

You can reuse dielectric fluid in same unit

Since the distribution of PCBs at concentrations of 50 ppm or greater is prohibited, PCB or PCB-contaminated equipment can be serviced with your own PCB or PCB-contaminated fluid if you already own it. Dielectric fluid with a PCB concentration of 50 ppm or greater, can be reused in a unit as dieletric fluid if it was removed from the same unit during servicing. Servicing with non-PCB or PCB-free fluid is also allowed. Any dielectric fluid containing 50 ppm or greater PCBs used for servicing must be stored in accordance with the storage for disposal requirements.

USEFUL TIP – MIXING RULE

If dielectric fluid containing less than 500 ppm PCBs is mixed with fluid containing 500 ppm or greater PCBs, then the resulting mixture must not be used as dielectric fluid in any electrical equipment. The entire mixture must be considered to be greater than 500 ppm PCBs and must be disposed of in accordance with EPA requirements (see Section 2.4.8).

2.4.6 Reclassification Requirements

Reclassification of a PCB or a PCB-contaminated item is a process where you reduce the concentration of PCBs in the dielectric fluid by replacing the fluid to a concentration where the item falls into a new classification level. PCB items may be reclassified to a PCB-contaminated or non-PCB item by draining, refilling, and otherwise servicing the unit. PCB items that end up with a PCB concentration less than 500 ppm can be reclassified as PCB-contaminated, and items that end up with a PCB concentration less than 50 ppm can be reclassified as non-PCB.

USEFUL TIP

Reclassification of an item to PCB-contaminated or non-PCB reduces the risks associated with operating the item as well as the number of requirements that apply to the item.

Testing flushed and refilled item

After draining and refilling the item with new oil, it must be operated under normal load for at least three months. At the end of the three month period, if the dielectric fluid is tested and found to be less than 50 ppm or less than 500 ppm, it is reclassified (see Section 2.4.1 for details on testing dielectric fluid). Please note that the EPA has proposed

USEFUL TIP

Reclassification of PCB or PCB-contaminated pole mount transformers generally is not economical. Service companies can conduct the retrofil and testing activities for you.

rules which will change the requirements for reclassification. If you decide to reclassify your transformer, please check with EPA's TSCA Hotline (see Section 2.7.2) to see if the new rules are in effect.

2.4.7 Storage for Disposal Requirements

There are three types of areas that a cooperative can have for storage prior to disposal. They are permanent storage for disposal, temporary storage for disposal, and pallet storage for disposal. It should be noted that any equipment used in the areas for handling the stored materials that come in direct contact with the PCBs cannot be removed from the area until it is decontaminated according to the requirements in 40 CFR Section 761.79.

There are very specific requirements for storing PCB equipment that has been removed from service and is to be disposed of, as well as for fluid containing PCBs that is intended for disposal. Complying with storage requirements involves the following five basic elements:

- Establish a proper storage facility for PCBs.
- Utilize proper containers for PCB storage.
- Manage storage area(s) in accordance with marking, recordkeeping, and inspection requirements (summarized in this Chapter).
- Understand which PCBs and PCB items require storage and the various storage options available.
- Remove PCBs and PCB items from storage and dispose of them within the 1-year time limitation.

USEFUL TIP

The storage requirements for PCBs and PCB items have remained virtually the same since the PCB regulations were set out. However, the improper storage of PCBs remains one of the most frequent areas of non-compliance based on EPA inspection reports for regional EPA offices.

Note: Equipment in storage for reuse is considered to be "in service" and does not have to be managed according to these storage requirements.

Requirements for Storage for Disposal Areas

Elements of successful storage program

All articles and containers in permanent or temporary storage for disposal areas must be inspected for leaks monthly (as discussed in Section 2.4.4). These inspections must be documented, and an example of an inspection form for storage for disposal areas is provided in Section 2.6.6.

Requirements for Permanent Storage for Disposal Areas

If you store your own PCB waste and have a permanent storage for disposal area, or you store your waste for more than 30 days, you must notify EPA and you must have an EPA identification number (see box). Cooperatives required to have an EPA identification number for their PCB activities must file EPA Form 7710-53 "Notification of PCB Activity." This form can be obtained from your Regional EPA office, and from NRECA. EPA will assign a number to your cooperative. If you have more than one facility in your cooperative, you must have an WPA identification number for each facility. This notification was supposed to have been done by April 1990. If you are a temporary storer (i.e., you do not have a permanent storage area), and store for less than 30 days, an I.D. number is not required.

USEFUL TIP

If you already have an identification number as a hazardous waste generator as required by RCRA (see Chapter 3, section 3.3.2), all you have to do is notify EPA of your PCB storage activities and amend your status to include those activities. You must have a number for each *separate* facility within your cooperative (but not for multiple storage areas at one facility) where you store PCBs.

EPA notification of PCB activity requirements and procedures

All transporters, commercial storers and disposers of PCB waste must have an EPA identification number. Cooperatives are not usually transporters or commercial storers and disposers of PCB waste, so long as they do not accept PCB waste from anyone other than their own members. If your cooperative does accept PCB waste from others (i.e., it is a commercial storer and disposer), you must comply with a large number of requirements, including permitting, recordkeeping, etc. These requirements are not discussed in this document, and it is recommended that your cooperative manages only its own PCB waste.

The following are specific requirements for permanent PCB storage for disposal areas:

- The area must have an adequate roof and walls to prevent rain water from reaching stored items and to prevent the accumulation of standing water.

- The area must have floors and continuous 6-inch high curbing. The floor and curbing must 1) be constructed of smooth and impervious materials (i.e., Portland cement, concrete or steel); and 2) provide a containment volume equal to at least two times the internal volume of the largest article or container being stored, or 25 percent of the total volume of all articles or containers stored, whichever is greater.

- The area cannot be located near or have access to drains, valves, expansion joints or sewer lines, or be within the 100-year flood plain.

- The area must be marked with a large PCB label (as described in Section 2.4.3). All doors to the building containing the permanent storage for disposal area (if such an area is within a building) also must be marked.

- Drums of PCB oil/debris and PCB equipment must have the date they were removed from service for disposal marked on them, and they must be labeled with the M_L mark.

- Each drum of PCB oil/debris must have a record of the quantity of each batch of PCBs added to the drum and the earliest date each batch was added to the drum.

- The equipment and drums in the area must be inspected for leaks at least once every 30 days, and any leaked liquids cleaned up immediately (see Section 2.5, or Chapter 7 for details on cleaning up leaked material).

- Any leaking containers and articles must be transferred immediately to properly marked non-leaking EPA-approved PCB containers.

Figure 2-3 provides an example of a permanent storage area. There are no requirements in the regulations for permanent storage areas other than the ones above. This sketch is a suggestion for how a cooperative could set up a storage area. The sketch shows a receiving area. If you set up your storage area like the sketch, equipment is first brought to this receiving area for decision on what to do with it, and for marking and recordkeeping. If the equipment is going to be disposed of, it should be

moved to the storage for disposal area. If you know you will repair and reuse the equipment, or you do not yet know whether you will repair it or reuse it, put it in the storage for reuse area. In any of these areas, if the equipment is leaking or weeping, it must be cleaned up immediately according to the requirements in Section 2.5.

Requirements for Temporary Storage for Disposal Areas

There are very specific requirements for temporary storage for disposal areas

Temporary storage for disposal areas may be used only if you store your articles or containers for less than 30 days from removal from service, the equipment is not leaking, and any liquids in drums or containers have PCB concentrations of less than 500 ppm. If you meet these criteria, you may use a temporary storage for disposal area, and you do not have to notify EPA of PCB activities (as discussed above under permanent storage for disposal areas) or have to have an identification number. The following are specific requirements for temporary storage for disposal areas:

- The equipment or container must have an attached notation which states the date the equipment or container was removed from service.
- Only non-leaking articles or equipment may be stored in this type of area. Leaking articles or equipment must be placed in a non-leaking container that contains enough absorbent material to absorb any liquid PCBs remaining in the item.
- No drums with liquids having a PCB concentration equal to or greater than 500 ppm may be stored in this type of area.
- Drums of liquids that have a PCB concentration of 50 to 499 ppm may be stored in the area if the area has a spill prevention, control and countermeasure plan (see Section 2.5 and Section 7). Each drum must have a notation that says the liquids in the drum do not exceed 500 ppm.

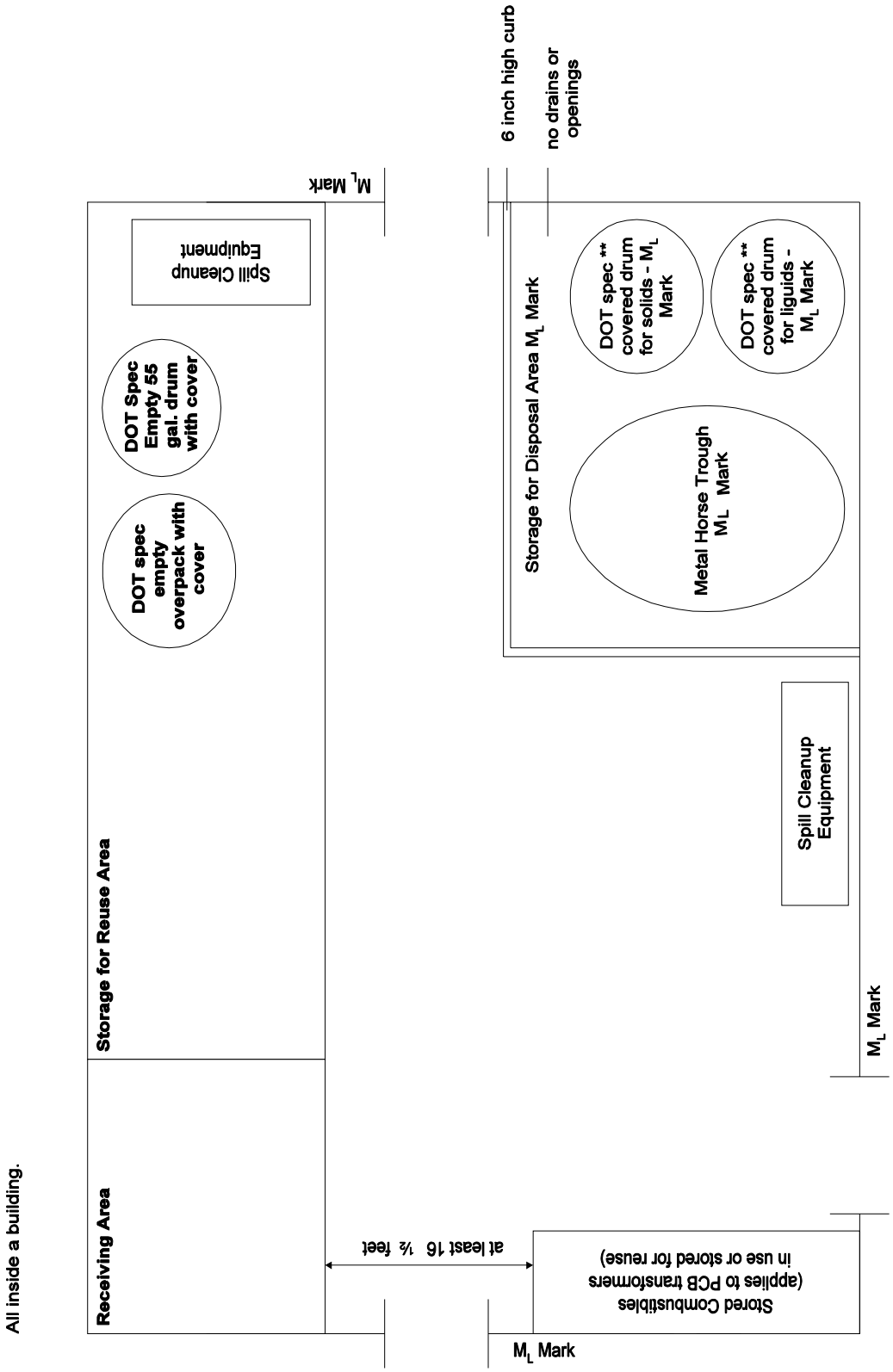

Figure 2-3. Example Permanent Storage Area

- The area must be marked with a large PCB label (as described in Section 2.4.3).
- Non-liquid items contaminated with PCBs (soil, rags, etc.) may be stored in containers.
- The area must be inspected for leaks at least once every 30 days, and any leaked material immediately cleaned up (see Section 2.5, and Chapter 7 for details on leaks and spills).

Requirements for Pallet Storage for Disposal

Non-leaking and structurally undamaged large, high voltage PCB capacitors and PCB-contaminated equipment may be stored on pallets next to the permanent storage for disposal area if the permanent area has unfilled storage space for at least 10 percent of the volume of the capacitors and equipment stored on pallets. This area must be inspected weekly, and leaks cleaned up immediately.

One-year Storage Limitation

As previously mentioned, PCBs and PCB items stored for disposal must be disposed of within one year. The one-year storage limit includes the time it takes the disposal facility to properly dispose of the PCB material. The disposal facility should be given at least 3 months to dispose of the PCB material. If the PCB material is not disposed of within the one-year time frame, the disposal facility is required to report any missed deadlines to the EPA, and the cooperative can be held legally responsible for not following the rules. Therefore, for your cooperative to avoid being held responsible, the PCB material must be removed from storage at your cooperative and sent to the disposal company within 9 months from the date when it was first removed from service for disposal.

2.4.8 Disposal Requirements

Any items containing regulated levels of PCBs (50 ppm or greater) must be disposed of in accordance with the regulations to minimize exposure to humans and the environment. The regulations governing disposal of PCBs include

USEFUL TIP

Superfund regulations require that building owners and waste generators (i.e., cooperatives) notify the National Response Center at (800)424-8802 when a release of a pound or more of PCBs occurs, or when disposing of a pound or more of PCBs in a 24-hour period.

Superfund (see box) as well as TSCA. TSCA Disposal requirements vary depending on the type of item, and the concentrations of PCBs in the dielectric fluid in the item, or of the liquid in a container (see Figure 2-4). After your PCBs or PCB items have been disposed of, you should receive a certification of disposal from the disposal contractor. Keep this certification with your other records for the PCBs or PCB items.

Liability caution - deal with reputable disposers

Cooperatives should be careful to deal with reputable disposal facilities that are properly permitted (ask the disposal facility for its EPA identification number, as well as what types of permits it holds, and for copies of those permits). A list of approved disposal facilities can be obtained by calling your EPA Regional office. Discuss the requirements detailed below with your disposal contractor, and agree on the disposal method before sending your waste to the contractor. If the disposal contractor does not dispose of the PCB waste properly, your cooperative could be held liable for environmental damage caused by the improper disposal. The following details the proper disposal methods for various types of PCBs or PCB items.

- ***Liquids containing above 500 ppm PCBs.*** These must be incinerated in an incinerator which meets the requirements of 40 CFR 761.70 or be granted an alternative disposal approval (i.e., chemical detoxication) as discussed in 40 CFR 761.60.

- ***Liquids containing 50–499 ppm PCBs.*** These must be incinerated, burned in a high efficiency boiler that meets the requirements of 40 CFR 761.70 , disposed of by an approved alternate disposal method (such as chemical detoxification) that meets the requirements of 40 CFR 761.60, or solidified and placed in a TSCA-permitted chemical waste landfill. Containers holding free liquids cannot be placed in any landfill unless the liquid is removed, mixed with non-biodegradable sorbent (i.e., solidified), or otherwise eliminated. Solidified liquid waste containing greater than 50 ppm PCBs can only be placed in a hazardous waste landfill that has a TSCA permit.

- ***Non-liquid PCBs.*** PCB wastes such as contaminated soil and debris, must be incinerated or disposed of in a TSCA-permitted chemical waste landfill.

- ***PCB (500 ppm or greater) transformers, bushings, voltage regulators, switches, circuit breakers, reclosers, and cable.*** These items can be incinerated in a unit that meets the

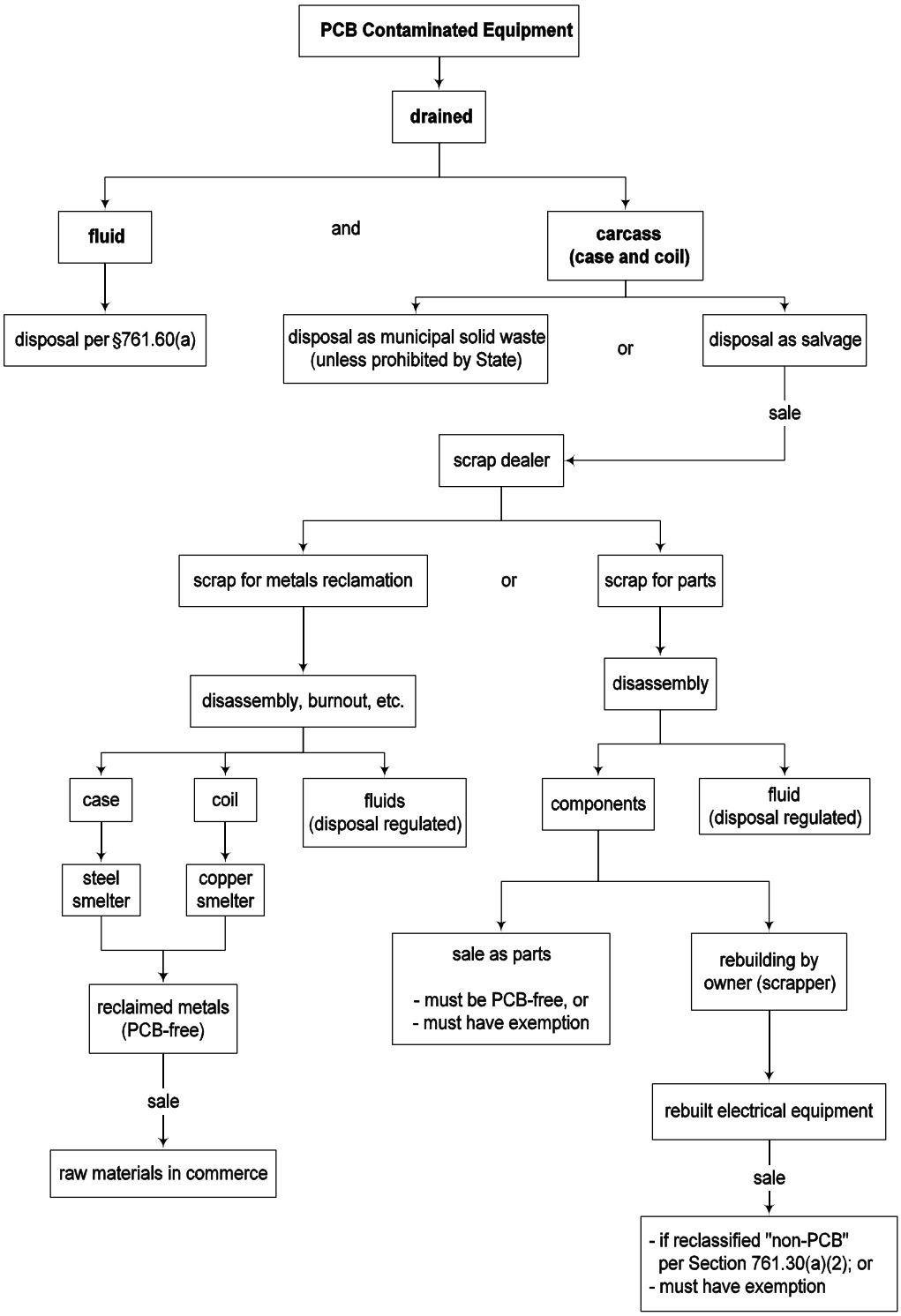

Figure 2-4. Salvage Options for Drained Carcasses under 500 ppm PCBs

requirements of 40 CFR 761.70. They also can be disposed of in a TSCA-permitted chemical waste landfill, that meets the requirements of 40 CFR 761.75 if the liquid PCBs are drained from the item; the drained carcass filled with solvent (kerosene, xylene, toluene, or other solvents in which PCBs are readily soluble); and allowed to stand for at least 18 hours before being drained thoroughly. The PCB-liquids and contaminated solvent must be disposed of as discussed above for PCB-liquids. Alternate disposal methods for the carcasses include carcass decommissioning. There are also some commercial facilities which have an alternate disposal approval to decommission PCB equipment, sending the metal components for recycling and disposing of the remainder.

- ***PCB-contaminated (50–499 ppm) transformers, bushings, voltage regulators switches, circuit breakers reclosers and cable.*** These items can be disposed of in an approved, high-efficiency boiler that complies with 40 CFR 761.65, in a permitted chemical waste landfill that meet the requirements of 40 CFR 761.75, or they can be drained, and the liquids disposed of as discussed above for PCB-liquids. Drained carcasses need not be rinsed, and their disposal is not regulated. However, they cannot be sold for use as parts and components in repair or rebuilding activities. They may be scrapped or salvaged for metals recovery provided that any residual PCBs are destroyed during metals recovery. EPA approved alternate disposal methods also are allowed for PCB-contaminated transformers, voltage regulators and switches, if the methods meet the requirements in 40 CFR 761.60.

- ***Large PCB capacitors.*** These items must be incinerated as discussed in 40 CFR 761.70 or disposed of by an approved alternate disposal method as discussed in 40 CFR 761.60.

- ***Non-leaking electric ballasts which contain PCBs and small PCB capacitors.*** Currenly, under the EPA PCB rules, these items may be disposed of as municipal solid waste. However, EPA is planning to amend the rules to

USEFUL TIP

Many States have developed regulations governing the disposal of non-leaking PCB containing ballasts that are sometimes more stringent than the Federal regulations. Contact your regional EPA and State solid and hazardous waste agencies to learn of any additional regulations that may apply.

limit the number of ballasts which may be disposed of as municipal solid waste. Cooperatives also should be aware that some State laws prohibit disposal of these items in a municipal solid waste landfill (see box). It is recommended that the non-leaking PCB ballasts or capacitors are first packed with absorbent packing material and sealed in containers prior to disposal.

Disposal of ballasts may pose Superfund liability

Cooperatives should consider future potential Superfund liability for environmental damage when choosing how to dispose of small capacitors or electric light ballasts containing PCBs. Cooperatives that dispose of any quantity of small PCB capacitors and electric light ballasts in municipal solid waste landfills may have Superfund liability. Alternative methods such as recycling, which are more protective of the environment are recommended. Recycling involves first removing the PCB-containing materials for incineration or land disposal and reclaiming metals used in the carcass for manufacturing other products. A list of ballast recyclers is provided at the end of this chapter.

- ***Leaking PCB-containing fluorescent light ballasts.*** Leaking PCB-containing ballasts must be incinerated at an EPA-approved high temperature incinerator or through recycling (a list of recyclers is provided at the end of this chapter in Section 2.7.5). High temperature incineration is more expensive than recycling, but this method is often preferred since the PCBs are completely destroyed removing them from the waste stream permanently. Therefore, high temperature incineration also removes the potential for future liability. The leaking PCB ballasts or capacitors must be packed with absorbent packing material and sealed in containers prior to disposal.

Manifesting Your PCB Waste for Transportation to the Disposal Contractor

General manifesting information

You must manifest your PCB waste (50 ppm PCBs or greater) when you ship it off-site for disposal. A manifest is a shipping document which accompanies the shipment of PCB waste. Chapter 4 provides detail on manifesting and transportation requirements for hazardous materials, which include PCB wastes. The following summarize specific transportation requirements for your PCB wastes.

- You do not need to manifest your PCB waste when you transport a piece of equipment taken out of service in your cooperative's truck back to your cooperative and put it in the storage for disposal area. However, you must mark your truck as described in Section 2.4.3.

- The manifest must include a description of the PCB waste, the weight (in kgs) of the PCB waste, and the date of removal from service of the PCB waste.

- The manifest must include your EPA PCB waste handling identification number (if you have one, or the number "40 CFR 761" if you do not have a number), the transporter's EPA PCB identification number, and the disposal facility's EPA PCB identification number.

Refer to Chapter 4 for details on characterizing and manifesting your PCB-wastes, and preparing them for transport.

2.4.9 How Can You Reduce the Risks Involved with PCB Transformers?

As discussed briefly in Section 2.5, and indicated throughout this chapter, there are numerous risks involved with using and maintaining PCB transformers and other PCB equipment, as well as in disposing of the PCBs and PCB items at your cooperative. This section presents a number of suggestions for reducing the risks, and thereby reducing the environmental liability to your cooperative of a spill or release of PCBs into the environment.

Begin an Inventory Program

There is no requirement to inventory the transformers you have in use. However, you can most effectively manage your PCBs if you know where they are and what their classification is. Earmark anything manufactured prior to 1979 or any unit that has been repaired or maintained by a suspect facility (some facilities were not careful about the type of dielectric fluid used to refill transformers) as suspect. Try to test any transformers in your system that you can not detemine the PCB content of (or have maintenance performed on them - they will be tested as part of maintenance, see Section 2.4.1), and keep all lab data with your records. Also keep records of all maintenance actions on each transformer.

Most cooperatives will have to perform such an inventory over a period of several years. You might establish a priority system of which transformers could cause you the most headaches, and test those first. For example, if a transformer leaked, which ones could leak into water, onto buildings or parking lots, etc.? Test those first. If you perform your own repair or maintenance, test each suspect transformer as it comes into your shop .

Never Let a Transformer Leave Your Control Without Knowing its PCB Concentration

Make sure your records on each transformer you own are up to date and include date of purchase, all available maintenance records, laboratory tests on the dielectric fluid, or any other information that has helped you determine the PCB concentration (see Section 2.4.1). If necessary, collect a sample of the dielectric fluid (see Section 2.4.1) and submit it for analysis to determine the concentration.

Dispose of Your PCB Transformers (500 ppm or greater)

There is no requirement to dispose of equipment which is still working. However, the most complete reduction of risk from use of a PCB transformer can only be achieved by properly disposing of the item (see Section 2.4.8). An added benefit is proper disposal of PCB Transformers eliminates the risk of clean-up costs. If the PCB Transformer were to rupture or spill, it would cost your cooperative a lot of money to clean-up. By paying the cost to dispose of the PCB transformer, you have a much higher likelihood of avoiding very expensive cleanup costs in the long run should the transformer rupture and spill PCBs into the environment.

Reclassify Your PCB Transformer (500 ppm or greater) or Your PCB-contaminated Transformer (50–499 ppm)

Details on procedures for reclassification are provided in Section 2.4.6.

Enclose Your PCB Transformer (500 ppm or greater)

If you construct an impervious berm which could hold 100 percent of any spilled material around your PCB transformer, it would contain spills. This could be a useful option for very large transformers that you cannot easily or economically reclassify or dispose. Construction of a berm would not prevent all problems, but it would help to contain them, which is important. The requirement to inspect each PCB transformer on a quarterly basis is

reduced to inspection on a yearly basis for transformers that have a berm which could contain 100 percent of any spilled dielectric fluid.

Inspect Your PCB Transformers (500 ppm or greater) and Your PCB-contaminated Transformers (50–499 ppm)

Details on inspection procedures and requirements are provided in Section 2.4.4. Routine inspections can identify potential problems before they occur, and allow the problem to be resolved without it becoming a major catastrophe.

Plan Ahead for Emergencies

Plan what you will do if there is a spill or fire related incident involving your equipment containing PCBs. There are OSHA requirements which require cooperatives to prepare written emergency plans and train employees to handle spills and other emergencies (these are discussed in Section 7).

2.5 SPILLS, LEAKS, AND FIRES

PCBs potentially can be released to the environment if spills or leaks occur, or if the PCB item catches fire and releases PCBs. This section provides general information on reporting, responding to and cleaning up spilled or leaked PCBs or fires involving PCBs. Chapter 7 provides detailed information on requirements for handling and cleaning up spills and leaks, and information on preventing such occurrences.

Call National Response Center after spill

If you have a spill of more than one pound of PCBs anywhere into the environment, or if your spill (regardless of amount) contaminates surface water, sewers, drinking water supplies, grazing lands, or vegetable gardens, you must immediately call the National Response Center at 1-800-424-8802 and your regional EPA office. If you have a spill from an untested oil-filled transformer, you must assume it contains 50 to 499 ppm. In this case, if you spill 270 gallons of oil or more you must report the spill. Most States also have reporting requirements which may differ from the federal reporting requirements. For cleanup of spills of PCBs which occurred prior to May 4, 1987, contact your local EPA Regional office for direction on cleanup.

2.5.1 Spill Cleanup Requirements

PCB spill cleanup policy

If any type of spill or leak of PCBs in concentrations greater than 50 ppm occurs, immediate action must be taken to protect human health and the

environment. The PCB Spill Cleanup Policy found at 40 CFR Part 76l, Subpart G tells you what you must do to properly handle PCB spills (50 ppm and above).

Low concentration spills (from a source containing less than 500 ppm PCBs) involving less than 1 pound of PCBs require a double-wash-rinse cleanup of all contaminated surfaces, and cleanup of all visible traces in soil within 48 hours. Records of your cleanup must be kept.

USEFUL TIP

The concentration of PCBs in contaminated soil or other media and cleanup material is measured by the PCB concentration in the material which spilled or leaked. For example, if you have a transformer with 345 ppm PCBs, the PCB concentration in the material the PCBs spilled or leaked into is 345 ppm. Dilution in the soil is not relevant, and all material must be cleaned up to the required cleanup level, and disposed of (along with the cleanup material) as if it contained 345 ppm.

High concentration spills (from a source containing 500 ppm PCBs or greater),or low concentration spills involving 1 pound or more by weight require cleanup to be initiated within 24 hours. You must clean up all visible traces of oil and decontaminate surfaces to specified levels depending on the location of the spill. You must verify your cleanup is complete by sampling (see Section 2.4.1 for information on developing a sampling plan). Records of cleanup and sampling activities must be kept. Cleanup must be completed promptly.

2.5.2 What Do I Do if I Have a Fire Involving PCBs?

Call National Response Center if fire involves a transformer.

A "fire related incident" is defined as any incident involving a PCB transformer which involves the generation of sufficient heat and/or pressure to result in the violent or nonviolent rupture of the PCB transformer and the release of PCBs. If one of your cooperative's PCB transformers is involved in a fire related incident, you must immediately report the fire to the National Response Center at 1-800-424-8802 and take measures to contain and control the possible release of PCBs into water. You must keep records of the incident.

Keep combustibles away from transformers

To eliminate fire hazards, combustible materials, including but not limited to, paints, solvents, plastics, paper, and sawn wood cannot be stored within 5 meters (about 16-17 feet) of a PCB transformer in use or stored for reuse. However, EPA has determined that you can store PCB transformers for reuse on wooden pallets because the pallet is deemed "in-use" as well as the transformer. EPA did not intend that equipment and materials in use in transformer locations such as wooden pallets and timbers used to support heavy transformers be considered stored

combustibles. They are considered similar to the equipment they support or to ease transport of the machinery.

2.6 RECORDKEEPING REQUIREMENTS

You must develop and maintain records that document that you are following all of the use and disposal requirements. The recordkeeping requirements are contained throughout the PCB rules, but many of them are found at 40 CFR Section 761.180(a). Table 2-4 also provides most record retention requirements. Cooperatives must keep the following records: EPA identification number, records of required inspections and maintenance history, notification to the fire department, spill and leak documents, commercial building notifications, manifests and certificates of disposal, and records for PCB containers in storage for disposal. Examples of notification and inspection records are provided in Section 2.7.6. If you want to be able to prove the PCB concentration in your equipment, you also must keep laboratory test results.

In addition, cooperatives which use or store at least one PCB transformer, 50 PCB large capacitors, or 99.4 lbs of PCBs in containers must keep the following records:

- ***Annual Records*** of the activities involving the cooperatives' PCBs, including those in use or in storage for reuse, and those in storage for disposal or which have been disposed of during the year. These records must include all manifests, certificates of disposal exception reports, and one-year exception reports.

- An ***Annual Document Log*** which includes specific and detailed information (dates, weights, etc.) on the PCBs used, stored and disposed of during the year. An example annual document log is provided in Section 2.7.4.

The records and logs must be maintained for at least 3 years <u>after</u> the facility no longer uses or stores PCB transformers, capacitors or containers in the above quantities. All records must be available for inspection by EPA upon request.

Document	Retention Period	Regulation
Annual Documents, Annual Document Logs, Annual Records (i.e., waste manifests and certificates of disposal signed by disposer)	3 years after facility ceases using or storing 99.4 lbs. PCBs, 1 or more PCB transformers, or 50 or more large PCB capacitors	761.180(a)
PCB transformer inspection and maintenance records	3 years after disposing of the transformer	791.30(a)(1)(xii) or (xiii)
Waste manifests for PCB waste by generator who is not subject to annual document requirements	3 years from the date the PCB waste was accepted by the initial transporter	761.209(a)[1]
Spill cleanup records - decontamination records (see Section 7)	5 years after completion of cleanup	761.125(b)(3) or (c)(4)
PCB Transformer Fire Department notification	None[2]	761.30(a)(1)(vi) & 761.30(a)(1)(xv)(D)
PCB Transformer Commercial Building notification		761.30(a)(1)(vii)
PCB storage facility inspection records		761.65(c)(5)
Retrofill Records		761.30(a)(2)(iv) & 761.30(a)(1)(iii)(C)(1)
Bulk storage batch records		761.65(c)(8)
PCB notification (EPA Form 7710-53)	While facility owns or operates a PCB storage facility subject to 71.65(b) or (c)(7)	761.205(a)(2)
Installation of PCB transformer in an emergency in or near commercial buildings - documentation supporting reason for installation	None[2]	761.30(a)(1)(iii)(B)(1)
PCB transformer involved in a fire - record of communication with National Response Center		761.30(a)(1)(xi)
SPCC plan for containers as specified in 761.65(c)(7)(I)	While container is storing PCBs >49 ppm.	761.65(c)(7)(ii)
Bulk storage batch records	While PCBs >49 ppm are stored in bulk storage	761.65(c)(8)

[1] Title 40 CFR 761.209(d) states: "The periods of record retention required by this section shall be extended automatically during the course of any outstanding enforcement action regarding the regulated activity".

[2] There is no specified retention time for these documents, but U.S. EPA strongly suggests that these documents be retained for the same amount of time as the annual document logs in order to prove that these requirements have been met.

Table 2-4. Records Retention Periods for PCB Generators

Keep records longer than 3 years

Although there is no requirement to do so, cooperatives should keep these records beyond the three-year period to show compliance and limit liability in future years. This is particularly true of records which show that a cooperative is PCB free. If the laboratory tests are not kept, the cooperative will have no way to prove its equipment does not contain PCBs unless the nameplate specifically says it does not. In addition, documents may be useful to show you are a very limited contributor if your cooperative is pulled into a Superfund site.

2.7 RESOURCES

2.7.1 References

Guidelines for Polychlorinated Biphenyls. Lawrence Livermore National Laboratory, an LLNL Environmental Guidelines Document.

PCB Q & A Manual. Operations Branch, Chemical Management Division, EPA Office of Pollution Prevention and Toxics. 1994.

PCB Information Package. TSCA Assistance Service. January 1977.

PCBs *in Flourescent Light Fixtures – A Fact Sheet*. EPA Region 10, Air and Toxics Division. May 1993.

Light Brief. EPA Green Lights Program. EPA 430-F-92-009. August 1992.

Lighting Waste Disposal. EPA Green Lights Program. January 1994.

Fluorescent Lamp Disposal. EPA Green Lights Program. EPA 430-F-93-002. January 1993.

2.7.2 For Further Information

TSCA Hotline: (202) 554-1404

If you are not sure whether you own or use PCBs or PCB equipment or need to find out more about the Federal regulations, you can call this hotline. Your hotline call will be confidential. Hotline personnel will most likely be able to answer your question, but may refer you to your EPA Regional office contact for further information. (See section 1.4.)

National Response Center (NRC) Hotline: (800) 424-8802

If you have a spill of PCBs – see Section 2.5

You may also call your State rural electric cooperative association or your cooperative attorney. You should contact your State environmental agency (see Section 1.4)or your cooperative attorney regarding individual State requirements.

2.7.3 Definitions

For more detailed definitions, see the PCB rules at 40 CFR 761.3.

Askarel—A brand name of PCBs, also a generic name for a broad class of fire-resistant insulation fluids. Askarel is a term commonly used to describe PCB dielectric fluid.

Askarel Transformer—A common reference to a transformer that contains any of the brand name PCB fluids thus indicating a very high concentration of PCBs

Ballast (fluorescent light)—A device for accumulating and holding a charge of electricity and that includes a capacitor containing 0.1kg (0.2lb) or less of dielectric fluid.

Capacitor Types—The following assumptions may be used if the actual weight of the dielectric fluid is unknown. A capacitor whose total volume is less than 100 cubic inches may be considered to contain less than 3 lbs of dielectric fluid, and a capacitor whose total volume is more than 200 cubic inches must be considered to contain more than 3 lbs of dielectric fluid. A capacitor whose volume is between 100 and 200 cubic inches may be considered to contain less than 3 lbs of dielectric fluid if the total weight of the capacitor is less than 9 lbs.

Certificate of Disposal—A document that certifies disposal of specifically identified PCB waste and which must be provided to the generator within 30 days of completion of disposal. Such Certificates of Disposal must be retained by the generator for at least 3 years after the generator ceases using or storing PCBs.

Disposal—To intentionally or accidentally discard, throw away or otherwise complete or terminate the useful life of an object or substance. Includes actions relating to containing, transporting, destroying, degrading, decontaminating, or confining those substances, mixtures, or articles that are being disposed.

Large High-voltage Capacitor—A capacitor which contains 3 lbs. or more of dielectric fluid and which operates at 2,000 volts (a.c. or d.c.) or above.

Large Low-voltage Capacitor—A capacitor which contains 3 lbs. or more of dielectric fluid and which operates below 2,000 volts (a.c. or d.c.).

Leak or Leaking—Any instance in which a PCB article, PCB container, or PCB equipment has any PCB chemical substance or mixture on any portion of its external surface (whether or not the fluid came from inside that item).

Low Voltage—As applied to capacitors, an operating voltage level of less than 2,000 volts.

Manifest—The shipping document, EPA Form 8700-22, and any continuation sheet attached to EPA Form 8700-22, originated and signed by the generator of PCB waste in accordance with the instructions included with the form.

Mark—The descriptive name, cautions, instructions or other information applied to PCB mixtures, articles, chemical substances, containers, equipment, or other objects or activities described in accordance with the EPA guidelines.

Non-PCB Transformer—A transformer that contains less than 50 ppm PCBs.

PCB—An acronym for polychlorinated biphenyl.

PCB Annual Log—A written log of documents that includes a summary of the annual records and an inventory of PCB materials. The deadline for compiling the annual log is 6 months after the end of the calendar year. This log shall be retained for at least three years after PCBs are reduced below regulated quantities.

PCB Annual Records—Includes all documentation relative to the acquisition or disposal of PCBs over a 12-month period. This documentation includes purchase orders, manifests, certificates of disposal and inadvertent generation reports. Annual records must be maintained for the same period as the annual log.

PCB Article—Any manufactured item, other than a PCB container, whose surface(s) (inside or outside) has been in direct contact with a PCB

chemical substance or a PCB mixture and includes capacitors, transformers, electric motors, pumps, pipes, etc.

PCB Article Container—Any package, can, bottle, bag, barrel, drum, tank or other device used to contain a PCB article or PCB equipment, and whose surface(s) has not been in direct contact with PCB chemical substance or PCB mixture.

PCB-contaminated Transformer—A transformer that contains 50 ppm or greater but less than 500 ppm PCBs.

PCB Equipment—Any manufactured item, other than a PCB container or a PCB article container, which contains PCB articles or other PCB equipment. Included are street lights, microwave ovens, fluorescent lights, electronic equipment, motor controls, etc.

PCB Free—A term some manufacturers place on the nameplate of electrical equipment to indicate the equipment contains less than 2 ppm PCBs. Some manufacturers may mean the equipment contains less then 1 ppm or 0 ppm in some cases when they use this term.

PCB Item—Any PCB container, PCB article container, PCB article, or PCB equipment that deliberately or unintentionally consists of or has as a part of it any PCB or PCBs at a concentration of 500 ppm or greater.

PCB Mixture—Any mixture which contains 500 ppm or greater of a PCB chemical substance, and any mixture which contains less than that amount because of any dilution of such a mixture. Includes (but not limited to) dielectric fluid and contaminated solvents, oils, waste oils, other chemicals, rags, soil, paints, debris, sludge, and materials contaminated as a result of a spill such as clothing, gravel, dirt, etc.

PCB Transformer—A transformer that contains 500 ppm or greater PCBs.

PCB Waste—Mineral oil dielectric fluid from PCB-contaminated electrical equipment, liquids other than mineral oil dielectric fluid, any non-liquid PCBs at concentrations of 50 ppm or greater.

Posing an Exposure Risk to Food or Feed—Being in any location where human food or animal feed products could be exposed to PCBs released from PCB equipment.

ppm—Part(s) per million

Retrofill—To remove PCB or PCB-contaminated dielectric fluid and to replace it with dielectric fluid so as to lower the PCB content of the electrical equipment for purposes of reclassification.

Small Capacitor—A capacitor which contains less than 3 lbs of dielectric fluid.

Spill—Intentional or unintentional spills, leaks or other uncontrolled discharges of PCBs where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases.

Transformer Classifications—Please note than any transformer that has been retrofilled and converted from a PCB Transformer, PCB-contaminated transformer, or non-PCB Transformer cannot be classified as such until proper reclassification has occurred (see information on reclassification in Section 2.4.6).

2.7.4 Annual Document Log

The written annual document log to cover the previous calendar year (January through December) must be prepared for each facility by July 1 of each year. The annual document log must be available for inspection at your facility by authorized EPA representatives during normal business hours. The owner or operator of the facility must know the location of the records.

The regulations require that the annual document log be kept at the facility for at least 3 years after the facility ceases using or storing PCBs and PCB items. In practice, you need to keep the document log indefinitely to demonstrate your compliance with the regulations. Questions may arise concerning your procedures several years later and the document log will be needed to demonstrate compliance and limit your liability.

Preparing Your Annual Document Log

An example of an annual document log (multiple forms) is provided at the end of this section. Use this section with the forms to write your log. The written annual document log must include the name, address and EPA identification number of your cooperative, and the calendar year covered. The log also must include the following information for each PCB transformer, large (high or low voltage) PCB capacitor, other PCB articles

(other than transformers and large capacitors), containers of PCBs, or PCB articles in containers at or generated at your cooperative:

- Which are in service (or stored for reuse) at the end of the calendar year
- Which have been removed from service and placed into storage for disposal (note: storage for disposal includes items or containers en route to be disposed)
- Which have been disposed of.

Each item or container owned or generated by your facility must be noted on the forms, with as much information requested on the forms as you have available. Information such as the manufacturer or dielectric fluid trade name that is unknown should be noted as such, and explained to the best of your ability.

2.7.5 PCB Disposal and Recycling Information

The following companies are commercially permitted to dispose of PCBs. Those marked with an asterisk(*) are permitted to operate in all ten EPA Regions.

Company	*Address*	*Phone No.*
Incinerators		
Aptus, Inc.	P.O. Box 1328 Coffeyville, KS 67337	(312) 251-2680
	P.O. Box 27488 Salt Lake City, UT	(801) 521-9009
	1160 N. Aptus Road Aragonite, UT	
Chemical Waste Management	P.O. Box 2563 Port Arthur, TX 77643	(409) 736-2821
Rollins	P.O. Box 609 Deer Park, TX 77536	(713) 930-2300
WESTON	One Western Way West Chester, PA 19380	(215) 692-3030*
Alternative Thermal Technologies		

Company	*Address*	*Phone No.*
General Electric	100 Woodlawn Avenue Pittsfield, MA 01201	(413) 494-2700
Chemical Dechlorination		
Chemical Waste Management	1550 Balmer Road Model City, NY 14107	(716) 754-8231
Exceltech, Inc. (ENSCO Subsidiary)	41638 Christy Street Fremont, CA 94538	(415) 659-0404
Aptus, Inc.	P.O. Box 1328 Coffeyville, KS 67337	(316) 251-6380
PPM, Inc. (USPCI Subsidiary)	1875 Forge Street Tucker, GA 30084	(404) 934-0902*
ENSR Operations (formerly Sunohio)	1700 Gateway Bldv. S.E. Canton, OH 44707	(216) 452-0837*
Transformer Consultants, Div. of S.D. Myers, Inc.	180 South Avenue Tallmage, OH 44278	(216) 452-0837*
Trinity Chemical Co., Inc.	6405 Metcalf, Cloverleaf 3, Suite 313 Shawnee Mission, KS 66202	(913) 831-2290
CECOS International Process Center	4879 Spring Grove Avenue Cincinnati, OH 45232	(513) 681-5738
Aptus Inc.	P.O. Box 1328 Coffeyville, KS 67337	(316) 251-6380
Unison Transformer Services, Inc.	5801 Riverport Road Henderson, KY 43420	(502) 827-0541
Quadex Environmental Company	1940 N.W. 67th Place Gainesville, FL 32606	(904) 373-6066*
General Electric	One River Road Schenectady, NY 12345	(518)385-2426
S.D. Myers, Inc.	180 South Avenue Tallmadge, OH 44278	(800) 444-9580
PCB Transformer Decommissioning (Disassembly/Smelting)		

Company	*Address*	*Phone No.*
Aptus, Inc.	P.O. Box 1328 Coffeyville, KS 67337	(316) 251-6380
Transformer Consultants, Div. of S.D. Myers, Inc.	180 South Avenue Tallmadge, OH 44278	(800) 444-9580
Unison	1302 W. 38th Street Ashtabula, OH 44004	(216) 992-8665
	3126 Brinkerhoff Road Kansas City, KS 66115	(913) 321-3155
Chemical Waste Landfills		
Chemical Waste Management Alabama, Inc.	P.O. Box 55 Emelle, AL 35459	(205) 652-9721
	P.O. Box 471 Kettleman City, CA 93239	
Chem-Security Systems, Inc.	Star Route, Box 9 Arlington, OR 98712	(503) 454-2643
Envirosafe Services, Inc. of Idaho	P.O. Box 16217 Boise, ID 83715-6217	(800) 274-1516
CWM Chemical Services Control, Inc.	1550 Balmer Road Model City, NY 14107	(716) 754-8231
U.S. Ecology, Inc.	P.O. Box 578 Beatty, NV 89003	(702) 553-2203
U.S. Pollution Control, Inc.	Grayback Mountain 8960 N Highway 40 Lake Point, UT 84074	(801) 595-3900
Biological		
Detox Industries, Inc.	12919 Dairy Ashford Sugar Land, TX 77478	(713) 240-0892

Company	*Address*	*Phone No.*
Ballast Recycling Services		
Eastern Environmental Technologies	Norwalk, CT	(203) 856-2014
Ensquare	Newton Upper Falls, MA	(617) 969-9238
Environmental Energy Group	Denton, TX	(817) 383-3632
FulCircle Ballast Recyclers	Cambridge, MA	(617) 876-2229
	Bronx, NY	(212) 328-4667
Salesco U.S.A.	Honolulu, HI	(800) 368-9095
Transformer Service, Inc.	Concord, NH 03302	(603) 224-4006

This is not a complete list of companies who provide recycling and disposal services.

2.7.6 Example Inspection And Notification Record Reports

These are included at the end of the section, following the annual report example.

PCB ANNUAL DOCUMENT LOG
FOR CALENDAR YEAR 19_____

(For use by user/storer other than commercial or disposer.)

Name and Address of user/storer Facility:

_____

_____

_____

_____

EPA ID No. _____
(12 digit number - use "40 CFR Part 761" if exempt, otherwise number is obtained from EPA.)

Prepared by: _____
(Signature)

Title:_____

Date: _____

I. PCB TRANSFORMERS

A. In Service at End of Calendar Year (includes in storage for future use):

Serial Number	Manufacturer	Physical Location	Dielectric Tradename	PPM PCB	Date Place in Service	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in transformers in service: _____

b. Total number of PCB transformers in service: _____

B. Removed from Service and Placed into Storage for Disposal:

Serial Number	Manufacturer	Dielectric Tradename	PPM PCB	Date Removed from Service	Date Placed in storage	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in transformers removed from service: _____

b. Total number of PCB transformers removed from service: _____

c. Name and address of initial storage facility: _____

_____

C. Disposed of:

Serial Number	Manufacturer	Date Removed from Service	PPM PCB	Kg. Wt. of PCB	Date Shipped	Manifest Number	Confirmed * Waste Rec'd.	Kg. Wt. of PCBs

***When PCB waste is transported by an independent transporter.**

a. Total Kg. Wt. of PCBs in transformers shipped for disposal: _____

b. Total number of transformers shipped for disposal: _____

c. Total number of transformers actually disposed: _____

d. Name and address of disposal facility: _____

_____

II. LARGE, HIGH OR LOW VOLTAGE PCB CAPACITATORS (3 lbs. Or more of dielectric fluid).

A. In Service at End of Calendar Year (includes in storage for future use):

Serial Number	Voltage	Manufacturer	Physical Location	Dielectric Tradename	Date Placed in Service	Volume	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in capacitators in service: _____
b. Total number of PCB capacitators in service: _____

B. Removed from Service and Placed into Storage for Disposal:

Serial Number	Voltage	Manufacturer	Dielectric Tradename	Date Removed from Service	Date Placed in storage	Volume	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in capacitators removed from service: _____
b. Total number of PCB capacitators removed from service: _____
c. Name and address of initial storage facility: _____
_____

C. Disposed of:

Serial Number	Volume	Manufacturer	Date Removed from Service	Kg. Wt. of PCBs	Date Shipped	Manifest Number	Confirmed* Waste Rec'd.	Date of Disposal

***When PCB waste is transported by an independent transporter.**

a. Total Kg. Wt. of PCBs in capacitators shipped for disposal: _____
b. Total number of capacitators shipped for disposal: _____
c. Total number of capacitators actually disposed: _____
d. Name and address of disposal facility: _____
_____

III. PCB ARTICLES (other than transformers and large capacitators). Use only one page for each specific type of PCB Article (i.e., regulators, circuit breakers, pipes, etc.). Add pages as needed, giving totals by specific type of PCB Article.

A. In Service at End of Calendar Year (includes in storage for future use):

Article Type	Serial Number	Manufacturer	Physical Location	Dielectric Tradename	PPM PCB	Date Place in Service	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in Articles in service: _____
b. Total number of PCB Articles in service: _____

B. Removed from Service and Placed into Storage for Disposal:

Article Type	Serial Number	Manufacturer	Dielectric Tradename	PPM PCB	Date Removed from Service	Date Place in storage	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in Articles removed from service: _____
b. Total number of PCB Articles removed from service: _____
c. Name and address of initial storage facility: _____
_____

C. Disposed of:

Article Type	Serial Number	Manufacturer	Date Removed from Service	PPM PCB	Kg. Wt. of PCBs	Date Shipped	Confirmed* Waste Rec'd.	Date of Disposal

***When PCB waste is transported by an independent transporter.**

a. Total Kg. Wt. of PCBs in Articles shipped for disposal: _____
b. Total number of Articles shipped for disposal: _____
c. Total number of Articles actually disposed: _____
d. Name and address of disposal facility: _____
_____

IV. PCBs IN CONTAINERS (includes bulk-storage and tanker-trucks).

A. In Service at End of Calendar Year (includes in storage for future use):

Container Number	Container Type	Description of Container Contents	Physical Location	Date Place in Service	Volume	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in containers in service: _____
b. Total number of PCB containers in service: _____

B. Removed from Service and Placed into Storage for Disposal:

Container Number	Container Type	Description of Container Contents	Date Removed from Service	Date Place in Storage	Volume	Kg. Wt. of PCBs

a. Total kilogram weight of PCBs in containers removed from service: _____
b. Total number of containers removed from service: _____
c. Name and address of initial storage facility: _____
_____

C. Disposed of:

Container Number	Date First Item Removed from Service	Description of Container Contents	Kg. Wt. of PCBs	Volume	Date Shipped	Manifest Number	Confirmed* Waste Rec'd.	Date of Disposa

***When PCB waste is transported by an independent transporter.**

a. Total Kg. Wt. of PCBs in containers shipped for disposal: _____
b. Total number of containers shipped for disposal: _____
c. Total number of containers actually disposed: _____
d. Name and address of disposal facility: _____
_____

V. PCB ARTICLES IN CONTAINERS

A. In Service at End of Calendar Year (includes in storage for future use):

Container Number	Description of Container Contents	Physical Location	Date Place in Service	Volume	Kg. Wt. of PCBs	Kg. Wt. Of Cont.

a. Total kilogram weight of PCB Articles in containers in service: _____
b. Total number of PCB Article containers in service: _____

B. Removed from Service and Placed into Storage for Disposal:

Container Number	Description of Container Contents	Date Removed from Service	Date Place in Storage	Volume	Kg. Wt. of Arts.	Kg. Wt. of Cont.

a. Total kilogram weight of PCB Articles in containers removed from service: _____
b. Total number of PCB Article containers removed from service: _____
c. Name and address of initial storage facility: _____
_____

C. Disposed of:

Container Number	Description of Container Contents	Date first Item Removed from Service	Kg. Wt. of Arts.	Volume	Date Shipped	Manifest Number	Confirmed * Waste Rec'd.	Date of Disposa

***When PCB waste is transported by an independent transporter.**

a. Total Kg. Wt. of PCB Articless in containers shipped for disposal: _____
b. Total number of PCB Article containers shipped for disposal: _____
c. Total number of PCB Article containers actually disposed: _____
d. Name and address of disposal facility: _____
_____

Telephone Log for Contacting Disposers and Transporters

(should be included in Annual Document Log)

(Fill out one for each telephone call and attach all logs to copy of manifest.)

Year:

Telephone Calls Made to Independent Transporters, or Designated Commercial Storers or Disposers

---

Date: Time:

Person Called, Company Name, and Telephone Number:

Person Who Made Call:

Waste Called About (describe, including manifest #):

Summary of Conversation:

What Happened to Waste?

PCB Transformer _____ Inspection Record
serial number

(keep separate form for each transformer)

Date	Manufacturer	Physical Location	PCB Concentration or Tradename	Leaks		Location of Leak	Inspected By
				Yes	No		
9/7/94	Westinghouse	Plant B	Inerteen		✓		J. Adams

1. *a. If yes, describe location: _____

   b. Date leak discovered: _____

   c. Estimate of the amount of fluid released from leak: _____

   d. Date of any cleanup, containment, or repair or replacement: _____

   e. Description of any cleanup, containment, or repair performed: _____
   _____
   _____
   _____

   f. Results of any containment: _____
   _____
   _____
   (Daily inspection required for uncorrected active leaks. Cleanup must be initiated as soon as possible, but in no case less than 48 hours after discovery).

2. Comments: _____
   _____
   _____
   A leak is a PCB spill which results in ANY quantity of PCBs running off or about to run off the external surface of the transformer. For purposes of the definition, a PCB spill includes a weep, seep, or drip.

3. Signature of person performing inspection: _____

COMMERCIAL BUILDING OWNER
NOTIFICATION OF PCB TRANSFORMERS

(Commercial building owners must be notified of PCB transformers located inside their building and/or any PCB transformers located within 30 meters of their building.)

1. Name of Commercial Building: _____
2. Address of Commercial Building: _____
3. Building Owner of Record: _____ Tel. No.: _____
4. Owner of PCB Transformer: _____ Tel. No.: _____
5. Address of PCB Transformer Owner: _____
   _____

6. **PCB Transformer Inventory**

Serial Number	PPM PCB	Kg. Wt.	Street Address of Transformer	Specific Location at Address	Principal Constituent	Type of Installation

7. _____
(Signature) (Date)

FIRE DEPARTMENT NOTIFICATION OF PCB TRANSFORMERS

1. Name of Facility: _____
2. Facility Street Address: _____
   _____
3. Name of Facility Representative to Contact in Case of Emergency: _____
   _____
4. 24 hr. Telephone Number of Facility Representative: _____
5. Name of Person Contacted at Fire Department: _____
6. Address of Fire Department: _____
   _____
7. Fire Department Telephone Number: _____

8. **PCB Transformer Inventory**

Serial Number	Dielectric Tradename	PPM PCB	Kg. Wt.	Street Address of Site	Location of Transformer at Site	Principal Constituent

7. _____ _____
(Signature) (Date)

PCB Storage Area Inspection Record

Type of Area

☐ Permanent

☐ Temporary

☐ Pallet

For ____

(Name and Location of Storage Area)

Date of Inspection	Condition of Storage Area (Any cracks?)	Types of Equipment in Storage	Any Leaks? (Yes/No) if yes, do corrective action record	Describe Leaks	Corrective Action Taken (leaks cleaned up, item repaired, etc.)	All Equipment and Containers Dated? (Yes/No)	Inspector Signature

PCB Storage Area Inspection Record

For _____
(Name and Location of Storage Area)

Date of Inspection	Condition of Storage Area (Any cracks?)	Types of Equipment in Storage	Any Leaks? (Yes/No) if yes, do corrective action record	Describe Leaks	Corrective Action Taken (leaks cleaned up, item repaired, etc.)	All Equipment and Containers Dated? (Yes/No)	Inspector Signature

Inspection Record for Miscellaneous PCB Liquids and Articles in Use or Stored for Reuse

Date	Item Inspected	Location of Item	Any Leaks? (Yes/No)	Last Date of Service	Inspector

Leaking Item Corrective Action Record

(to be completed every day until item is repaired or leak resolved)

Date of Inspection	Leaking Item	Exact Location of Leak on Item	Estimate of Amount or Fluid Released to Date	Corrective Action(s) Taken (continuing to contain active leak, cleanup spill, item repaired, etc.	Date of Repair/Replacement	Date Cleanup Complete

3. HOW DO I MANAGE THE WASTE I GENERATE?

As a rural electric cooperative, you may generate various types of wastes including office trash, vehicle maintenance wastes, used utility poles, etc. As the waste generator you a re responsible for all steps in managing those wastes from generation to final disposal. It is important that you manage the wastes properly to protect yourself, your coworkers, others in your community, and the environment.

RESOURCE

This section contains some technical language, so if you have questions, please call your statewide association, cooperative lawyer, state environmental agency (see resources section), or the EPA RCRA hotline at 1-800-424-9346.

What is RCRA?

The Resource Conservation and Recovery Act (RCRA), passed in 1976, by the U.S. Congress, contains the Federal requirements for managing and disposing of solid and hazardous wastes (see box). Subtitle C of RCRA contains the regulations for the generation, storage, transportation, treatment and disposal of hazardous waste. Subtitle D of RCRA regulates solid waste. All of the Federal hazardous waste regulations are located in Title 40 of the Code of Federal Regulations (40 CFR) Parts 260 to 299.

This chapter provides an overview of the Federal regulations for managing the wastes your cooperative generates. It is organized to answer the following questions:

- Are any of the wastes I generate hazardous?
- What waste management regulations apply to my cooperative?
- How do I comply with waste management regulations?

USEFUL TIP

Many states have their own waste management requirements based on the Federal regulations. In some of these states the regulations are the same as the Federal regulations. Other states have developed requirements that are stricter than the Federal requirements. If your state has such requirements, you must comply with them.

The aim of this chapter is to give you a basic understanding of your waste management responsibilities. However, it is not a complete description of all waste management regulations because it does not include any of the state requirements which can be stricter than the Federal requirements (see box). To become familiar with your state's requirements, consult your state hazardous waste agency.

3.1 ARE ANY OF THE WASTES I GENERATE HAZARDOUS?

Definition of solid and hazardous waste

The answer to this question is complex and requires you to follow several steps. First you must determine what types of wastes your cooperative generates. RCRA defines two types of waste, solid and hazardous. Hazardous waste is a subset of solid waste (see box). If your waste does not meet the definition of solid waste, it will not be hazardous waste by definition.

DEFINITIONS

The definition of ***solid waste*** under RCRA is discarded material, including material that is abandoned, recycled or inherently waste-like. ***Hazardous waste*** is solid waste that is listed in the RCRA regulations as hazardous, or is defined by its hazardous characteristic.

Hazardous waste vs. hazardous material

It is important to understand the difference between hazardous materials (also called hazardous substances) and hazardous wastes. Various Federal regulations, such as the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Emergency Protection and Community Right-to-Know Act (EPCRA) (see Chapter 6), and the Hazardous Materials Transportation Act (HMTA) (see Chapter 4), contain lists of chemicals that are considered hazardous materials. Hazardous materials do not have to be wastes in order to be covered under those regulations.

USEFUL TIP

The HMTA contains regulations for transporting hazardous wastes and hazardous materials. These requirements are discussed in Chapter 4.

EXAMPLE

A drum of methyl ethyl ketone (MEK) being stored in your cooperative's warehouse is a hazardous material under EPCRA regulations, but it is not a hazardous waste under RCRA because it is not a waste. If the MEK becomes contaminated during storage and cannot be used, it becomes a waste, and, because it is on one of the RCRA lists (see Section 3.1.3), becomes a hazardous waste.

The RCRA regulations, however, only address wastes (i.e. materials to be discarded) regardless of whether they are hazardous or not. Hazardous wastes also are defined in DOT regulations as a subset of hazardous materials (see Chapter 4).

3.1.1 What Is Solid Waste?

The definition of solid waste is so broad that most materials you dispose of fall within it (see box). However, there are a number of disposable materials that are ex cluded from the definition of solid waste (and thus hazardous waste).

EXPLANATION

Solid waste is not necessarily just a solid item. Solid waste under RCRA can be a liquid, a solid, a semi-solid, or a contained gas.

Exclusions from solid waste definition

The following materials are excluded from the definition (in RCRA) of solid waste:

- Domestic sewage, and any mixture of domestic sewage and other wastes that passes through a sewer system to a publicly owned treatment works (POTW) for treatment. "Domestic sewage" means any untreated sanitary wastes that pass through a sewer system. See Chapter 8 for a discussion of disposal of these wastes.

- Industrial wastewater discharges that are point source discharges (i.e., they are discharged from a single point or pipeline, see Chapter 8) and are regulated under section 402 of the Clean Water Act (CWA). This exclusion only applies to the actual point source discharge. Industrial waste waters that are being collected, stored, or treated before discharge are not excluded, or are sludges that are generated by industrial wastewater treatment. If you are treating your own wastewater, the sludges are considered solid waste, and could be hazardous waste.

There are a number of other materials excluded from the definition of solid waste, but cooperatives do not ordinarily generate those kinds of materials.

3.1.2 What Is Hazardous Waste?

Once you have determined that your material to be disposed is solid waste, you then must determine if it is hazardous. Activities you typically perform at your cooperative such as vehicle maintenance or repair, vehicle refueling, equipment service and repair, spill cleanup, and managing pesticide

USEFUL TIP

Common materials you could be using at your cooperative which typically are hazardous waste when you are ready to dispose of them include solvents, cleaning products, herbicides, pesticides, and wood preservatives. PCB waste is not a hazardous waste unless it is a mixture of a PCB waste and a hazardous waste (like PCB-contaminated transformer oil mixed with a solvent). PCB waste is regulated under TSCA, and the PCB rules. These rules are discussed in Chapter 2.

application residues may generate hazardous wastes. So if you perform any of these activities, you may be generating hazardous wastes. Hazardous wastes may also be generated during power production operations at generation and transmission cooperatives but these will not be discussed in this document. Information on management of those wastes can be obtained from other EPA documents listed in Section 3.5.

For a waste to be classified as hazardous, either it is:

- On one of the four lists of hazardous wastes included in the RCRA regulations (this is called a "listed waste," see Section 3.1.3),
- It has one or more hazardous characteristic (this is called a "characteristic waste," see Section 3.1.4), or
- It is a ***mixture*** of a listed hazardous waste and other wastes. It is important to note that wastes that are mixtures that include hazardous wastes are regulated as hazardous waste regardless of the proportions of the mixture (see Section 3.1.5).

Sections 3.1.3 and 3.1.4 should assist you in determining if your wastes are listed or characteristically hazardous. It is important to note that some wastes that could be considered hazardous are exempt from the definition of hazardous waste (See Section 3.1.6).

USEFUL TIP

The label or material safety data sheets (MSDS) for the chemical or item to be disposed often will tell you whether it is a hazardous waste when it is disposed.

3.1.3 How to Use the Lists to Identify a Hazardous Waste

RCRA regulations (at 40 CFR Part 261.31 through 261.313) contain a set of four lists of wastes that are deemed hazardous. Currently, more than 400 wastes are on these lists. Wastes are ***listed*** as hazardous because they are known to be harmful to human health and the environment when not managed properly. Even when managed properly, some listed wastes are so dangerous they are called acutely hazardous wastes. Examples of acutely hazardous wastes include wastes generated from some pesticides that can be fatal to humans even in low doses.

Each list represents a different category of hazardous wastes. The categories are de fined by the source of the waste. Each category has a

different alphabet letter (K, F, U, and P). Each specific waste on a list is assigned a 4-digit code that starts with the alphabet letter followed by three numbers.

K-listed wastes are generated by specific types of processes, so it is unlikely that your cooperative generates any K-listed wastes.

F-listed wastes are from nonspecific sources. Many solvents such as toluene, xylene, and MEK become F-listed wastes after they have been used.

HOW TO READ THE LISTS

When you look at the F and K lists, the waste code is in the left-hand column. The middle column describes the waste. You must read these very carefully because the descriptions are very specific. The third column lists the code for why the waste is included on the list (T means toxic, I means ignitable, etc., H means the waste is an acutely hazardous waste). When you look at the P and U lists, the code is in the left-hand column, the chemical abstracts service (CAS) registry number is in the middle column, and the chemical name is in the right-hand column. If the chemical is listed for anything other than toxicity, that code also appears in the right-hand column.

U- and P-listed wastes are discarded **unused** commercial chemical products with the listed chemical name, or products where the listed chemical is the sole active ingredient. U- and P-listed wastes include off-specification materials, container residues, and spill residues. For example, a 5-gallon bucket of the herbicide 2,4-D that has rusted and the contents can no longer be used, would be an example of a U-listed waste (hazardous waste code U240). Used formulations of U- or P-listed wastes would be hazardous wastes under another list, or be characteristic hazardous wastes as described below.

A listed hazardous waste remains a hazardous waste, even if you spill it or mix it with something else.

3.1.4 How to Determine if the Waste Has a Hazardous Characteristic

A waste is characteristically hazardous if it is ***ignitable*** (it catches fire under certain conditions), ***corrosive*** (it corrodes metal or has a very high or low pH), ***reactive*** (it is unstable and explodes or produces toxic fumes, gases, and vapors when mixed with water or under other conditions such as heat or

RESOURCE

If you think your waste has one of the hazardous characteristics but you are unsure, you can call the EPA RCRA hotline at 1-800-424-9346, or the Chemical Referral Service Hotline at 1-800-262-8200. The Chemical Referral Service Hotline is provided by the National Chemical Manufacturers Association. In addition, NRECA or your statewide association may be able to assist you.

pressure), or ***toxic*** (it is harmful or fatal when ingested or absorbed or leaches toxic chemicals into the ground when disposed of on land). These characteristics can be found in the regulations at 40 CFR 261.21 to 61.24. If your waste has any of these characteristics, it is a characteristic hazardous waste.

Use MSDSs to determine if the product you are disposing has a hazardous character-asdic

Consult the MSDS for the product that you are discarding to help determine if, as a waste, it has any of these hazardous characteristics (e.g., reactivity, ignitability, toxicity, or corrosivity). You can determine if your material to be discarded is toxic by having it tested at an analytical laboratory using the toxicity characteristic leaching procedure (TCLP). A characteristic hazardous waste remains a hazardous waste as long as it displays the characteristic (see box).

USEFUL TIP – TREATING CHARACTERISTIC HAZARDOUS WASTE

Generators (see Section 3.2) may treat characteristic hazardous wastes to remove the hazardous character (in any way except by thermal treatment) in accumulation tanks or containers. The treatment must be completed within the storage time requirements for the waste, and the tanks or containers must be managed according to the save storage practices discussed in Section 3.3.3 (51FR 10146, pg. 10168, March 24, 1986).

3.1.5 The Mixture Rule

If a listed hazardous waste is mixed with other wastes (such as pouring spent listed solvents in the dumpster) or mixed with product material (such as a material containing chemicals that would be listed hazardous wastes if discarded, spill cleanup material, or spill-contaminated soil), and the ensuing mixture is then disposed of, the mixture is considered a hazardous waste. Cooperatives that unintentionally or knowingly mix listed hazardous waste with other materials may dramatically increase the amount of hazardous waste that must be disposed.

Mixtures of characteristic hazardous waste and other wastes remain hazardous, unless the mixture no longer displays the characteristic. For example, waste gasoline-soaked rags could be characteristically hazardous wastes because the waste gasoline met the characteristic of ignitability and the characteristic of toxicity (because of the amount of benzene present in the gasoline). If the gasoline-soaked rags do not meet these characteristics, however (or other hazardous waste criteria), the rags do not have to be managed as hazardous waste.

3.1.6 Wastes Excluded from Hazardous Waste Regulation

Some wastes are excluded from the definition of hazardous (and therefore, solid) waste. Types of excluded wastes that would be of interest to cooperatives include:

- Household waste, which is any material which has been generated in a residence and typically generated by a consumer in the household during daily tasks. Household wastes maintain this status throughout collection, transportation, storage, treatment, disposal, recovery or reuse. "Households" include single, and multiple residences, hotels and motels, and campgrounds.

- Solid wastes generated by the growing and harvesting of agricultural crops and/or the raising of animals, including animal manures, and which are returned to soils as fertilizers.

- Fly ash waste, bottom ash waste, slag waste, flue gas emission control waste, generated primarily from combustion of coal or other fossil fuel, except as provided by 40 CFR § 266.112 for facilities that burn or process hazardous wastes.

- Discarded arsenically-treated wood products (i.e., utility poles) which fail the TCLP test (see Section 3.1.4) for hazardous waste codes D004 through D017 (see Section 3.1.3) and which are not hazardous waste for any other reason. This exemption is only applicable if the wood products to be discarded are generated by persons who use them for their intended end use (i.e., cooperatives discarding arsenically treated utility poles).

- Petroleum-contaminated media and debris that fail the TCLP test for toxicity and are subject to underground storage tank (UST) Corrective Action regulations under 40 CFR Part 280 (see Chapter 5).

- Used chlorofluorocarbon refrigerants from totally enclosed heat transfer equipment, including mobile air conditioners, provided the refrigerant is reclaimed for further use.

- Used motor oil to be recycled, unless it is mixed with a hazardous waste. However, used motor oil has its own set of rules for management and you should be familiar with them (see Section 3.4 for additional information).

- Non-terne plated used oil filters, which are not mixed with listed hazardous wastes, if the filters are gravity hot-drained through one of the following methods:

- ✔ Puncturing the filter anti-drain back valve or the filter dome end and hot-draining;
- ✔ Hot-draining and crushing;
- ✔ Dismantling and hot-draining; or
- ✔ Any equivalent hot-draining method that will remove the used oil.

Contact the oil filter manufacturer to determine if they are terne-plated.

Samples of solid waste, water, soil, or air collected for testing to determine their characteristics or composition are excluded from some regulations during storage or transportation to and from a laboratory. Samples collected for the purpose of treatability studies are exempt during storage or transportation or while undergoing treatability studies at laboratories and testing facilities.

There are other wastes excluded from the definition of hazardous, but cooperatives generally would not generate these wastes in their normal course of activities.

3.2 WHAT ARE THE WASTE MANAGEMENT REGULATIONS THAT APPLY TO MY COOPERATIVE?

To determine which Federal hazardous waste regulations apply to your cooperative, you must first determine your generator category. EPA defines three categories of hazardous waste generators depending on the quantity of hazardous and acutely hazardous wastes generated. These categories are:

Hazardous waste generator categories

- Conditionally exempt small quantity generators (CESQGs) that generate less than 220 lbs (100 kg) of hazardous waste per calendar month and less than 2.2 lbs (1 kg) per month of acutely hazardous wastes, and never store more than 2,200 lbs (1,000 kg) for any period of time.

- Small quantity generators (SQGs) that generate 220 to 2,200 lbs (100 to 1,000 kg) of hazardous waste and up to 2.2 lbs (1 kg) per month of acutely hazardous wastes per calendar month and never store more than 13,228 lbs (6,000 kg) for any period of time.

- Large quantity generators (LQGs) that generate more than 2,200 lbs (1,000 kg) of hazardous waste per month and/or 2.2 lb (1 kg) of acutely hazardous waste per month.

3.2.1 How Do I Determine My Cooperative's Generator Category?

You must determine how much waste you generate in order to decide which category you are in. It is important that you measure only the amount of ***hazardous and acutely hazardous waste*** you generate ***each month***. These include:

USEFUL TIP

Many hazardous wastes are liquids and are measured in gallons, not pounds. To approximate the number of pounds of liquid you have, multiply the number of gallons by 8.3 (because a gallon of water weighs 8.3 pounds, and many liquids have a density similar to water). Most MSDSs list the density or specific gravity of the product, also.

What to measure

- Wastes that accumulate on your property before disposal or recycling for any period of time during the month,
- Wastes that were packaged and transported away from your cooperative during the month without being accumulated first (do not count wastes packaged and transported during the month, if they accumulated during previous months, or if they were already counted as wastes that accumulated during the month),
- Hazardous wastes placed directly in a regulated treatment or disposal unit at your cooperative without being accumulated first,
- Waste generated as still bottoms or sludges and removed from product storage tanks.
- Solvents generated from a parts washer, even if you have a contract with an outside company to manage those solvents. Your cooperative is still considered the generator of the waste solvents, and you must include them in your monthly totals.

Be careful not to double count your wastes. For example, if you shipped the waste off your facility for recycling or disposal within the month it accumulated, do not count it both as waste accumulated and waste transported.

What not to measure

Do not measure any wastes listed in Section 3.1.6 as exempt. Also, do not measure any of the following items:

- Wastes that might be left in the bottom of containers that have been thoroughly emptied through all conventional means such as pouring or pumping, and that no more than 2.5 cm (1 in) remains in the container

- Residues in the bottom of tanks storing products (such as fuel, solvents, unused motor oil) while the unit is in operation

- Any materials while they are managed immediately upon generation in a totally enclosed treatment unit, an elementary neutralization unit, or a wastewater treatment unit. Once these wastes are removed from the unit and stored they must be measured, however.

- Wastes (such as solvents or contaminated antifreeze) that are reclaimed continuously on site, as long as the wastes are not stored before being reclaimed. If you reclaim your solvents on site, and have a system for doing this that does not require the solvents to be removed from the system, you do not have to count them. If you have an antifreeze recycling system on site that connects directly to the vehicle, and places the recycled antifreeze back into the vehicle from which it came, do not count the antifreeze.

USEFUL TIP – SOLVENT RECYCLING

Solvent still bottoms, or residues from any on-site recycling are hazardous waste, and must be counted for determining generator status.

- Waste oil that meets the criteria for used oil (see Section 3.4.4) and is to be managed and handled as used oil.

- Batteries, pesticides, and mercury thermostats which fall under the universal waste rule (see discussion on universal waste rule, below), or lead-acid batteries to be recycled.

- Waste or off-specification chemicals, such as P or U-listed wastes, that used directly as ingredients in another manufacturing processes (i.e., you are selling the chemical to another manufacturer who can use it in their manufacturing process).

- Solvents that remain in a parts washer and are not removed as a waste.

3.2.2 What Is the Universal Waste Rule?

EPA issued the Universal Waste Rule in 1995 as an amendment to RCRA. It provides an alternative and less stringent set of management standards to those in 40 CFR parts 260 through 272 for three specific, but widely generated types of wastes that potentially would be regulated as hazardous.

USEFUL TIP

The universal waste rule is less stringent than existing RCRA regulations. Because of this, some states have not adopted it. Check with your state to see if it has. As of November 6, 1996, 27 states had adopted the universal waste rule standards, and 9 had proposals pending for adopting it. Also, some states include more than just batteries, mercury thermostats and pesticides in their definition of universal waste.

Under the rule, universal wastes include:

- ***Batteries*** that are spent, that will not be reclaimed or regenerated either at your cooperative or at a battery recycling/reclamation facility (under 40 CFR Part 266 Subpart G). Spent alkaline batteries are not typically hazardous waste and do not have to be managed as hazardous or universal wastes. Types of spent batteries your cooperative may generate that would be universal wastes include those in electronic equipment, mobile telephones, portable computers, and emergency backup lighting (see box, lead-acid batteries). If you are sending your spent lead-acid batteries to a reclaimer or regenerator, you may manage them according to the requirements in the universal waste rule, rather than according to the more stringent RCRA hazardous waste management requirements.

USEFUL TIP – LEAD-ACID BATTERIES

Spent lead-acid batteries can be managed either as universal waste or, if you know you will recycle or reclaim the batteries, according to specific requirements (in 40 CFR 366 Subpart G) for lead-acid batteries to be recycled (or reclaimed). It is recommended that you plan to recycle/ reclaim your spent lead-acid batteries (rather than dispose of them), and manage them according to the requirements in 40 CFR 266 Subpart G because these requirements are even less stringent than the universal waste management requirements.

- ***Pesticides*** that have been suspended or canceled including those that are part of a voluntary or mandatory recall under FIFRA (Section 19b) or by the pesticide registrant; are unused but managed as part of a waste pesticide collection program; or are obsolete, or damaged. Pesticides that are not solid wastes or are not hazardous wastes are excluded as are recalled pesticides and

recalled products managed in compliance with 40 CFR Section 262.70 (which addresses pesticides disposed of on the farmer's own farm according to the directions on the pesticide label, and the container is triple rinsed as required in the regulation).

- ***Mercury thermostats*** including temperature control devices containing metallic mercury. The ampules containing the mercury in these thermostats also can be considered universal waste if they are removed from the thermostat according to very specific requirements in the universal waste regulations. However, removing the mercury ampule can cause it to break and release the mercury, making you liable for a mercury spill and associated cleanup materials. In addition, removing the ampule makes the thermostat useless. Therefore, it is recommended that the entire thermostat assembly be left intact, and managed and disposed as universal waste. Thermostats that do not contain mercury are excluded.

The Universal Waste rule establishes requirements applicable to four types of universal waste generators or collectors. Two types apply to rural electric cooperatives: small quantity handlers of universal waste (SQHUW), and large quantity handlers of universal waste (LQHUW). Handlers include persons who generate or create such waste, as well as those who receive universal waste from others and consolidate it before sending it to other handlers, recyclers, or treatment/disposal facilities.

SQHUWs include those that accumulate less than 5,000 kilograms of universal wastes. LQHUWs are those that accumulate 5,000 kilograms or more of universal wastes. The other two types are transporters, and destination facilities. Specific requirements of the universal waste rule can be found at 40 CFR Part 273. Compliance with the universal waste rule is discussed in Section 3.4.3.

3.3 HOW DO I COMPLY WITH THE WASTE MANAGEMENT REGULATIONS?

Each category of hazardous waste generator (not to be confused with universal waste handler) must comply with the hazardous waste rules specific to that category (discussed below). Most cooperatives are either CESQGs or SQGs. Generation and transmission facilities may be LQGs. Only the requirements of CESQGs and SQGs will be discussed in this document. If you believe you are an LQG, you must refer to other documents for detailed information on your compliance requirements.

Depending on your activities, you might be regulated under different rules at different times. If, for example, you generate less than 220 lbs (100 kg) of hazardous waste and less than 2.2 lbs (1 kg) of acutely hazardous waste during one month, you would be considered a CESQG for that month, and your waste for that month would be subject to the hazardous waste management requirements for CESQGs. If, the next month, you generate between 220 and 2,200 lbs (100 to 1,000 kg) of hazardous waste, your generator status would change from CESQG to SQG and your waste would be subject to the management requirements for SQGs.

USEFUL TIP

In many cases, businesses that fall into different generator categories at different times choose to satisfy the more stringent requirements to simplify compliance.

3.3.1 What Are the Compliance Requirements for CESQGs?

You should consider your cooperative a CESQG if you consistently generate less than 220 lb (100 kg) of hazardous wastes per month, and less than 2.2 lb (1 kg) of acutely hazardous waste per month. As a CESQG, your compliance requirements are quite simple. There are three basic waste management requirements that apply to CESQGs. These requirements are:

- Identify your hazardous and acutely hazardous wastes and know which wastes you generate are hazardous.

- Do not generate more than 220 lbs (or 100 kg) per month of hazardous waste or more than 2.2 lbs (1 kg) per month of acutely hazardous wastes [this includes any wastes you shipped off your cooperative (for disposal) during that month]; and never store more than 2,200 lbs (1,000 kg) of hazardous waste or 2.2 lbs of acutely hazardous waste for any period of time.

- Ensure proper treatment and disposal of your waste.

For CESQGs, proper treatment and disposal of hazardous wastes are fairly simple. It involves ensuring the waste is shipped to one of the following facilities (see Chapter 4 for information on preparing your waste for shipping), or if you treat (e.g., solvent distillation) or dispose of your hazardous waste at your cooperative, ensure that your disposal facility is :

- A state or federally regulated hazardous waste management treatment, storage, or disposal facility (if your waste is hazardous).

- A facility permitted, licensed, or registered by a state to manage municipal or industrial solid waste.

- A facility that uses, reuses or legitimately recycles the waste (or treats the waste prior to use, reuse or recycling).

- A universal waste handler or destination facility subject to the universal waste requirements (if you choose to follow the universal waste requirements, which you are not required to do as a CESQG - see below).

You must comply with these requirements to retain your CESQG status, and remain exempt from the more stringent hazardous waste regulations that apply to SQGs and LQGs. However, it is recommended that you follow the waste storage and handling requirements for SQGs (provided in Section 3.3.2), to minimize the possibility of any leaks, spills or other releases that potentially could cause economic hardship to your cooperative.

CESQG Self-transporting of Hazardous Wastes

CESQGs are permitted to transport their own wastes to the treatment or storage facility, (whereas SQGs and LQGs must use a licensed, certified transporter). While there are no specific RCRA requirements for CESQGs who transport their own wastes, DOT requires all transporters of hazardous waste to comply with all applicable DOT regulations. In addition, DOT regulations require that all transporters of hazardous waste that qualify as a DOT hazardous material (see Chapter 4), including CESQGs, comply with EPA hazardous waste transporter requirements, found in 40 CFR Part 263. Both EPA and DOT transportation requirements are discussed in Chapter 4.

3.3.2 What Are the Compliance Requirements for SQGs?

If you determine, based on the amount of waste you generate, that you are an SQG, you must comply with the following requirements:

USEFUL TIP

Your state environmental protection agency can help you determine whether your cooperative is an SQG, and can answer your questions about quantities to count.

- Obtain a 12-character EPA Identification number (if you have not already done so). EPA and states use these numbers to monitor and track hazardous waste activities. You will need to use

your identification number when you send waste off site to be managed.

- Comply with monthly generation and maximum onsite accumulation limits.
- Follow the storage and handling procedures required by EPA for SQGs.
- Follow EPA requirements for access to communications or alarms, access to and testing and maintenance of emergency equipment, and emergency arrangements with local authorities (see Section 3.3.4).

How Does My Cooperative Obtain an EPA Identification Number?

> **USEFUL TIP**
>
> A few states use a form that is different from EPA form 8700-12. Check with your state agency to obtain the correct form.

First, contact your state agency to determine if you need an EPA Identification Number. If you do, obtain a copy of EPA form 8700-12 "Notification of Hazardous Waste Activity;" your state should provide this. With the form you will receive a booklet that contains instructions on how to complete the form, and information on how to identify your waste. Fill in the form completely. To complete item IX on the EPA form, you will need to identify each hazardous waste by its EPA hazardous waste code (see Section 3.1.3). You must complete one copy of the form for each business site where you generate or handle hazardous waste(s). Each site will receive its own number. Send the completed form to your ***state*** hazardous waste office. The address will be included in the information booklet that you will receive with the form.

What Are the Hazardous Waste Generation and Accumulation Limits for SQGs?

As an SQG, your cooperative is limited to generating less than 2,200 lbs (1,000 kg) of hazardous waste per month, and accumulating a maximum of 13,228 lbs (6,000 kg) of waste on site at any one time. You may only store your waste on site for 180 days before sending it off site for recovery, treatment or disposal. This accumulation time limit may be up

You may only store your waste on site for 180 days, or less

to 270 days if you must transport the waste more than 200 miles from your cooperative for recovery, treatment or disposal. Limited extensions to the time limits for accumulating your hazardous wastes may be granted by the state or regional EPA administrator for very specific reasons.

ACCUMULATION WARNING!

If you accumulate your waste longer than 180 days (or 270 days, see text), you are considered a treatment, storage, or disposal facility (TSDF) and must obtain an EPA operating permit.

While accumulating your hazardous waste at your cooperative, you are responsible for its safe management, which includes safe storage, safe treatment, preventing accidents, and responding to emergencies (such as spills) in accordance with federal regulations (see Chapter 7 for appropriate spill response activities and requirements). Safe storage practices are described below.

3.3.3 What Are Recommended Practices for Safe Storage of Hazardous Waste?

USEFUL TIP

It is a good practice never to mix wastes. Mixing wastes can create an unsafe work environment and potentially can lead to complex and expensive cleanups and disposal.

Wastes may be accumulated in tanks or containers (such as 55-gallon drums). Tanks or containers must be made of or lined with material compatible with the waste to be stored (to prevent the waste from corroding or reacting with the container). Take care not to mix incompatible types of waste or materials in the same container or tank (see box). Containers and tanks must be labeled with the words "HAZARDOUS WASTE," and containers must be marked with the date the waste was generated (i.e., the date when hazardous waste was first put into the container). You also should mark the EPA waste code on the container. Although Federal regulations do not require you to mark the EPA waste code on the container, most states do, and it is highly recommended.

Containers—You must keep your containers of hazardous waste closed (i.e., bungs and lids screwed tight) during storage; open them only when adding or removing waste. You must maintain the containers in good condition. Your containers should not be handled, stacked, or stored in any way that might rupture them, cause them to leak, or otherwise fail. If you store a few or many containers together in one area, you should

maintain enough space between or around your containers to permit unobstructed access by emergency personnel, or movement of fire protection, spill control, or decontamination equipment. Ignitable waste cannot be stored within 50 feet of a property line. NFPA requirements must be maintained also (see box). You should inspect the areas where containers are stored at least weekly to look for leaks and deterioration of the containers. The containers should be on pallets to be sure the bottom is not leaking. Weekly inspections also can be used to ensure that containers are being handled and stored correctly to prevent leaks or ruptures. If a container leaks, put the waste in another container, or contain it in some other way that complies with EPA regulations.

USEFUL TIP – STORING REACTIVE OR IGNITABLE WASTES IN TANKS OR CONTAINERS

The National Fire Code established by the National Fire Protection Association (NFPA) sets buffer zone requirements that specify distances considered to be safe for covered tanks containing ignitable or reactive wastes. You can obtain these requirements and other information on storing reactive or ignitable wastes by calling the NFPA at (617) 770-3000. The information will be under the list of publications for the "Flammable and Combustible Liquids Code."

Container Storage Areas—You should consider setting aside and marking a designated ***on-site hazardous waste storage area*** for your hazardous waste that should be considered a collection area for your whole cooperative. You also can accumulate up to 55 gallons of hazardous waste in properly labeled containers at or near the various parts of your cooperative where the waste is generated. These are called ***satellite accumulation areas***. Once 55 gallons of hazardous waste in properly labeled (marked "HAZARDOUS WASTE") containers or drums has accumulated in your satellite area, you must note the date on the container (when 55-gallons was accumulated) and move it to your designated on-site hazardous waste storage area.

As discussed above, SQGs can store waste on-site for 180 days (or for up to 270 days if the waste must be shipped over 200 miles) before sending it off site for recovery, treatment or disposal (there is no time limit for waste storage at CESQGs). The type of storage area SQGs must maintain and the container marking requirements are set by your state. Contact your state for details on these requirements.

Container Disposal—You must not throw away containers with product in them. If you have a container that has been emptied as much as possible by normal means, such as pouring, and has less than 1 inch of

You can not dispose of a container until less than 1 inch of product remains

product (or less than 3 percent of the total amount of product) remaining, the container can be crushed, recycled, or thrown away. Otherwise you must scrape out the product on the inside of the container and properly manage it as hazardous waste. Containers that have held acutely hazardous waste (P-listed wastes and a few F-listed wastes) must be triple rinsed before they are no longer regulated as hazardous waste. However, the rinsate from these containers is regulated as hazardous waste, and must be managed accordingly.

Tanks—You should provide at least two feet of freeboard (space at the top of the tank) in uncovered tanks, unless the tank is equipped with a containment structure, a drainage control system, or a standby tank with adequate capacity. You should equip any of your tanks that have automatic waste feed with a waste feed cutoff system, or a bypass system for use in the event of a leak or overflow. If you store reactive or ignitable wastes in tanks you should follow the National Fire Protection Association (NFPA) requirements (see box) for buffer zones between tanks, and for other precautions about storing these types of wastes in tanks. You should inspect discharge control and monitoring system equipment on your tanks, and the level of waste in uncovered tanks at least once each operating day. You also should examine the tanks and surrounding areas for leaks or other problems (such as corrosion) at least weekly. Chapter 5 provides additional information on managing and maintaining storage tanks.

3.3.4 How Should My Cooperative Be Prepared for and Respond to an Emergency?

Designate emergency coordinat-or(s) and prepare a contin-gency plan

The best way to prepare your facility for an emergency is to have a written contingency plan and a designated emergency coordinator. A contingency plan usually answers a set of "what if" questions such as what if one of the vapor degreasers leaks, what if there is an explosion and/or fire at a hazardous waste storage area? An emergency coordinator is an employee or group of employees, one of whom is on site or on call at all times and has the responsibility of coordinating all emergency response measures. Emergency coordinators must respond to any emergencies that arise.

Employees must be familiar with emergency procedures

EPA does not require CESQGs or SQGs to prepare a written contingency plan, in case of fire, explosion, or toxic release, however, having such a plan would provide an organized and coordinated course of action. Information on preparing contingency plans, is provided in Chapter 7. EPA does require all facilities to designate an emergency coordinator or coordinators, and requires that all employees be familiar with proper

waste handling and emergency response procedures as they apply to the employees responsibilities.

CESQGs—There are no emergency response requirements for CESQGs. However, it is good business practice to have, at a minimum, established basic safety guidelines and response procedures (such as the ones described in this section) to follow in the event of an emergency.

SQGs—EPA requires all SQGs to establish safety guidelines and procedures. EPA requires SQGs that store hazardous waste on site to be equipped with and ensure that personnel handling hazardous waste have access to the following:

Emergency requirements for SQGs

- An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to all personnel.
- A device, such as a telephone (immediately available at the scene of operations) or a hand-held, two-way radio, capable of summoning emergency assistance from local police and fire departments or emergency response teams.
- Portable fire extinguishers, fire control devices (including special extinguishing equipment , such as that using foam, inert gas, or dry chemicals), spill control materials, and decontamination supplies.
- Water at adequate volume and pressure to supply water hose streams, foam-producing equipment, automatic sprinklers, or water spray systems.

IN CASE OF EMERGENCY

In the event of a fire, explosion, or other release of hazardous wast that could threaten human health outside your cooperative, or if you think that a spill of a reportable quantity (note that for oil or gasoline spills, any spill that causes a sheen on surface waters must be reported) has reached surface water, call the National Response Center at 800-424-8802 to report an emergency. The Response Center will evaluate the situation and help you make the appropriate emergency decisions. In many cases, you will find that the problem you faced was not a true emergency, but it is better to call if you are not sure. Stiff penalties exist for failing to report emergencies!

Your cooperative must test and maintain all equipment to ensure proper operation. You also must attempt to secure arrangements with fire departments, police, emergency response teams, equipment suppliers, and local hospitals, as appropriate, to provide services in the event of an

emergency. Information on requirements for notification of emergency officials is provided in Chapter 7. Your contingency plan does not have to be a separate document, it may be part of your facility spill plan if you are required to prepare such a plan (see Chapter 7).

3.3.5 What Are the Waste Management Reporting Requirements?

Your cooperative is required to meet various reporting and recordkeeping requirements as part of your hazardous waste management obligations. These requirements are summarized below.

Uniform Hazardous Waste Manifest—The Uniform Hazardous Waste Manifest Form (EPA Form 8700-22) is a multicopy shipping document that reports the contents of the shipment, the transport company used, and the treatment/disposal facility receiving the waste. The manifest form is designed so that shipments of hazardous waste can be tracked from the site of generation to the final destination. Information for completion of this form is discussed in detail in Chapter 4. You must keep a copy of the manifest signed by the transporter who receives your waste for transportation. You must keep this copy until you receive a signed copy of the manifest from the company that takes your waste. It is important that you receive a signed copy of the manifest from the company that takes your waste because this is your proof that the waste made it to the final destination. The signed copy of the manifest is required to be kept on file for 3 years.

Land Disposal Restriction Notification—Land disposal restrictions (see Section 3.4.1) are regulations prohibiting the disposal of some hazardous wastes on land (i.e., in landfills) without prior treatment of the waste. A list of wastes that require treatment is provided in 40 CFR 268.40. With your initial shipment of hazardous waste to each treatment or storage facility your cooperative uses, you will have to provide a notification that specifies which of the wastes you have generated is restricted from land disposal. You also are required to submit a notification to each facility used every time your waste changes. This notification should be attached to your hazardous waste manifest (see above, and Chapter 4) and a copy placed in the file. This notification ensures proper treatment and disposal; copies of each form must be kept for 5 years.

If you plan to ship wastes off-site for recycling, then you may not need a Land Disposal Restriction Notification Form for every shipment. For SQGs, a “tolling agreement” can be developed for shipments after the initial shipment. Please contact your state for more information on these agreements, and the land disposal restrictions for your state.

3.4 HOW DO COOPERATIVES MANAGE SPECIFIC WASTES THEY GENERATE?

You are responsible for determining whether your waste is hazardous or not.

Typical wastes generated by cooperatives include office wastes, universal wastes (batteries, thermostats, pesticides), used oil, solvents, antifreeze, shop rags, non-PCB electrical equipment, lamps, paints, and spent aerosol cans. With the exception of most office wastes (toner cartridges, inks, and fluorescent light tubes can be characteristic hazardous waste - see Section 3.4.2) and used oil, these types of wastes could be classified as hazardous, and must be disposed of according to the requirements in RCRA. As the generator of the waste, you are responsible for determining whether it is hazardous or not. If you generate a waste that may be considered hazardous, the regulations require that either you have it tested, or assume it is hazardous and manage it accordingly. This section provides information for some specific types of wastes that cooperatives generate, including whether the waste is likely to be hazardous, and proper management and disposal practices for the various types of wastes your cooperative generates. A waste determination guide is provided in Section 3.5.3 to assist you with determining if your wastes are hazardous, and possible disposal techniques.

You are liable for your wastes after they leave your cooperative

It is important to be aware that even if you have shipped your waste off-site and the waste no longer is in your possession, your liability has not ended. Your cooperative can be held liable for any mismanagement of your wastes by your transporter, recycler, or treatment/disposal facility, even after they leave your facility. Even if your cooperative, waste transporter, or waste recycling, disposal, or treatment facility performs operations authorized by permits, if the company becomes bankrupt or can not accept the financial responsibility for a cleanup of hazardous waste, your cooperative may have to. So you can see it is important for you to know the proper procedures for managing your wastes.

3.4.1 Treatment and Disposal Methods

There are a number of different recycling, treatment and disposal methods available for your wastes, depending on the type of waste. They include landfilling, various

USEFUL TIP

Treatment or disposal facilities for solid or hazardous wastes must have some type of RCRA permit, depending on the operations at the facility. Recycling or reclamation facilities are not required to have a permit for the recycling process, only an EPA I.D. number. However, if the facility stores the waste for any length of time prior to recycling, it must have a permit to store the waste. Facilities receiving your wastes should have an EPA I.D. number, and provide you with a full copy of any applicable permits on your request.

forms of thermal destruction, and recycling. These methods are discussed below. It is important to note that the regulatory definition of recycling includes reclamation and resource recovery. EPA regulates treatment and disposal methods under RCRA (see box).

Landfills

Solid wastes and some types of hazardous wastes can be disposed in landfills. Solid wastes may be disposed in hazardous waste landfills, but hazardous wastes from SQGs and LQGs can not be disposed in solid waste landfills. Solid waste landfills are also known as municipal landfills or municipal solid waste landfills. Some states have special requirements for non-hazardous industrial waste landfills.

In the past, solid waste landfills did not employ any measures to prevent hazardous contaminants from migrating into the soils or groundwater, however, most new solid waste landfills do have liners. Hazardous waste landfills must have systems for preventing migration of the hazardous wastes from the landfill, and for detecting whether any hazardous wastes have migrated from the landfill. The costs for disposing of wastes in hazardous waste landfills are much higher than for solid waste landfills, because of the required prevention systems, and because of the liability to the operators, should hazardous wastes migrate from the landfill.

Land disposal restrictions

Hazardous waste landfills could be thought of as long-term storage facilities. EPA recognized this limitation and developed the land disposal restriction regulations which contain requirements for treating some hazardous waste (that are "restricted from land disposal" without some type of treatment) prior to disposal in a landfill. Land disposal restrictions were established to minimize the potential for landfilled hazardous waste to affect the environment. Examples of treatment prior to disposal include stabilization or solidification of liquid hazardous wastes.

USEFUL TIP

Whenever possible, alternatives that recycle or destroy your cooperative's waste should be chosen over landfilling. These alternatives could lessen your potential liability should the landfill be mismanaged and/or leak contaminants into the environment.

Thermal Destruction

The most common forms of thermal destruction for wastes are incineration, and open burning. Incineration involves thermal decomposition of the waste material by using a regulated flame, under

controlled conditions. Incineration reduces waste volumes and produces heat and chemical byproducts, some of which may be reused, or recycled. Emissions from incinerators are controlled to limit the discharge of pollutants to the air. PCBs and PCB equipment (see Chapter 2) are typically destroyed using incinerators. Cement kilns are a type of incinerator used to destroy hazardous wastes. Open burning can sometimes be used to destroy non-hazardous wastes such as office trash, or brush, but can not be used for disposal of hazardous wastes (Chapter 12 discusses open burning requirements).

Costs for destroying your wastes in an incinerator can be high, but often this is the best method for destroying the waste. Disposing of wastes by burning for energy recovery is much less expensive than incineration, but is not appropriate for many types of wastes.

Recycling/Reclamation/Resource Recovery

The definition of recycling includes activities such as reclamation, energy recovery, and other resource recovery activities. Recycling is usually the least expensive and least stringently regulated of the waste disposal methods. Some recycling activities such as solvent distillation, antifreeze recycling, burning used oil (or mixtures of used oil and solvents) for heat generation can be performed at your cooperative and the equipment for performing these operations is readily available. Recycling of other hazardous wastes such as batteries and PCBs can be performed by a qualified recycling facility.

USEFUL TIP

Some resource recovery activities (solvent distillation, antifreeze recycling) have the advantage of reusing existing product (and not consuming more product) as well as preventing possible soil and groundwater contamination from landfills, and eliminating air emissions from incinerators.

Chemical dechlorination and solvent extraction are recycling techniques for reclaiming PCB-contaminated oils. The result of chemical dechlorination is treated oil and a small amount of PCB sludge. The oil can be used as a dielectric fluid or reused as fuel in energy recovery, and the PCB sludge is regulated under TSCA. Solvent extraction of PCBs is another technique for PCB-contaminated oils. Freon is not a hazardous waste when recycled, but special training and certification is required for recycling or recovering freon.

3.4.2 Office Waste

As long as it does not contain any hazardous wastes, refuse generated in your cooperative's business office is considered solid waste, and can be disposed of in any municipal solid waste landfill. Examples of office waste that can be characteristic hazardous waste include toner cartridges, some types of inks, and fluorescent light tubes. Non-hazardous office waste also may be burned under certain conditions (see box, and Chapter 12 for details).

BURNING OFFICE WASTE

You should check with your state and/or local municipality to determine requirements for burning any non-hazardous solid waste your cooperative generates (see Chapter 12).

3.4.3 Universal Waste

Under the Universal Waste Rule (see Section 3.2.2), any SQG or LQG that produces universal waste may choose to manage that waste according to the universal waste requirements, in states that have adopted the less stringent requirements. The Universal Waste regulations are much less stringent than those for other hazardous wastes (see below), and usually it is advantageous for a cooperative that is an SQG or LQG to follow the universal wastes requirements.

UNIVERSAL WASTE MANAGEMENT REQUIREMENTS FOR CESQGs

CESQGs are not required to meet waste management requirements of the universal waste rule (see below), and may dispose of universal wastes as non-hazardous solid wastes.

Most cooperatives that choose to manage their universal wastes according to the requirements of the Universal Waste Rule probably qualify as a small quantity universal waste handler (SQUWH) (see Section 3.2.2 for definitions), rather than a large quantity handler. If your cooperative does its own transporting of your universal wastes to a universal waste handler (for recycling reuse or disposal), you also will be considered a universal waste transporter, and there are specific requirements in the Universal Waste Rule for transporters. Since most cooperatives do not transport their wastes, this section will focus only on the requirements for small quantity handlers.

Management requirements for Universal Waste

The substantive requirements under the universal waste rule for SQHUWs can be found at 40 CFR 273, Subpart B, and are summarized, below.

- You must manage your universal wastes to prevent the release of any universal waste or its components, and all releases must be

contained immediately. You must manage any release(s) of non-universal wastes according to the requirements in 40 CFR 260-272 (as discussed in this Chapter).

- You must not dispose, dilute, or treat your universal waste, except if you are responding to a release.

- You must clearly mark or label the waste item or container in which the waste is contained as follows:

  ✔ **Universal Waste**—type of waste (i.e., Battery(ies), Pesticide(s), Mercury Thermostat(s).

  ✔ **Waste**—type of waste (i.e., Battery(ies), Pesticide(s), Mercury Thermostat(s).

  ✔ "Used Battery(ies)," "Used Pesticide(s)," or "Used Mercury Thermostat(s)" (list only the one type of waste that applies).

- You can not accumulate your universal wastes for more than one year, except if you need a longer period to accumulate sufficient waste to facilitate proper recycling, treatment or disposal.

- If your cooperative is a SQHUW, you must inform all your employees of proper handling and emergency procedures for the universal wastes you generate.

- If your cooperative is a SQHUW, you may not transport your universal wastes to facilities other than universal waste handlers, universal waste destination facilities, or foreign destinations, and if you transport your universal wastes you must follow transporter requirements (see Chapter 4).

- If your cooperative is a SQHUW, and you send your universal wastes that are also hazardous wastes off-site, you must comply with transportation requirements for hazardous wastes (see Chapter 4) including packaging, labeling, marking and placarding the shipment, and preparing the correct shipping papers.

- If your cooperative is a SQHUW and your shipment of universal waste is rejected, you must either receive the waste back, or agree on an alternative destination facility.

- If a destination facility receives hazardous waste that is not universal waste from your cooperative, the facility must notify the Regional EPA office with your shipper information.

- If you are a SQHUW, you are not required to keep records of your shipments of universal wastes.

- If your cooperative is a SQHUW that exports universal wastes to a foreign destination, you must comply with specified primary exporter regulations (in 40 CFR 262 Subpart E), and obtain consent of the receiving country (usually through EPA). EPA acknowledgment of consent also is required.

3.4.4 Used Oil Management (Including Transmission Fluid, Brake Fluid, and Used Oil Filters)

Used lubricating oils include: motor oils; synthetic oils; transmission and brake fluid; non-hazardous petroleum-based lubricating fluids; hydraulic, cutting, gear and cooling oils; used oil filters; and transformer oils that contain less than 50ppm PCBs (see Chapter 2). Many of these are typically generated by cooperatives as a result of servicing vehicles and electrical equipment. Used oil is very difficult to dispose of. ***Used oil should not be disposed in sewers, drains, waste dumpsters or on the ground, or used for dust suppressant or control.*** Recycling (including burning for energy recovery - see below) of used oil that has not been mixed with any other waste (see below) is the most environmentally protective, and, often, the most economical approach to handling your used oil.

Recycling is the best disposal method for used oil

To create incentives for recycling of used oil, while ensuring that the oil is managed to protect human health and the environment, EPA developed the Used Oil Management Standards. These are a set of less strict requirements for managing used oil that is to be recycled. The Used Oil Management Standards apply to all automotive service shops (which may be one of your cooperative's operations), regardless of the amount of used oil generated. They can be found in 40 CFR 279.

If not recycled, used oil is subject to hazardous waste determin-ation

Disposal of used oil other than by recycling can be difficult, for a number of reasons. The primary reason is that municipal solid waste landfills do not accept liquids for disposal, and ***you may not dispose of the oil on the land***. Second, under the Used Oil Management Standards, if used oil is not to be recycled, it is subject to the solid and hazardous waste determination requirements under RCRA (discussed in Sections 3.1.3 and 3.1.4). So if the used oil is determined to be hazardous it must be

disposed of in a hazardous waste incinerator. If non-hazardous, since it can not go to a landfill, the only option is recycling.

Do Not Mix Hazardous Waste with Used Oil

You should not mix used oil with other materials regardless of the proportions because the mixture could be considered hazardous waste (see discussion of the mixture rule in Section 3.1.5), and you might not be able to manage and/or recycle it under the Used Oil Management Standards. Table 3-1 indicates which regulations apply to particular mixtures of used oil. It is important to note that, as Table 3-1 shows, EPA allows CESQGs to manage and designate mixtures of used oil and hazardous wastes as used oil, but not SQGs. However, many states do not permit such practices, and many waste transporters will not accept used oil that has been mixed with hazardous waste (or will charge significantly more to transport the mixture than for used oil that has not been contaminated), regardless of your generator status. Where "solid waste/hazardous waste determination" is indicated in Table 3-1 for SQGs, the used oil requirements do not apply and the used oil must be managed as any other solid waste that is potentially a hazardous waste as described in Section 3.3.3.

Used Oil Mixing Constraints

As Table 3-1 illustrates, EPA does not have strict mixing prohibitions for CESQG's, and permits SQG's to mix certain waste streams with their used oil without having to comply with the more strict hazardous waste requirements. However, some states do not allow even CESQGs to mix any hazardous waste streams with used oil. Check with your State to determine whether such mixing of used oil is allowed. It is not recommended that you mix solvents with used oil unless you intend to burn the mixture in your cooperative's space heaters (see below). EPA-approved waste transporters do not always accept solvent/oil mixtures, or may charge significantly more for transportation of mixtures than for segregated wastes (because the transporter may be required to manage the entire mixture as hazardous waste).

As Table 3-1 indicates, materials that are hazardous only due to the characteristic of ignitability may be mixed with used oil provided that the resulting mixture does not exhibit the characteristic of ignitability. In other words, materials such as fuel, kerosene, heating oil, and mineral spirits, all of which may be hazardous only because they can catch on fire, may be mixed with used oil, provided the mixture is not ignitable. If the resulting mixture is ignitable, or the used oil is mixed with a listed waste,

Table 3-1. EPA Regulatory Classification of Used Oil and Used Oil Mixtures that are Destined for Recycling.

Material	Small Quantity Generator Regulatory Standards[1]	Conditionally Exempt Small Quantity Generator Regulatory Standards[1]
Used Oil only	Used Oil	Used Oil
Used Oil mixed with listed hazardous waste (e.g. solvent)	Hazardous Waste	Used Oil
Used Oil mixed with characteristic hazardous waste (e.g. corrosive)	Used Oil if no characteristic, Hazardous Waste if exhibits characteristic	Used Oil
Used oil mixed with waste exhibiting only ignitability characteristic and mixture does not exhibit ignitability characteristic.	Used Oil	Used Oil

1 States may have more stringent regulatory classifications than EPA. Check with your state for the appropriate classification.

or a waste with the characteristic of toxicity, corrosivity or reactivity, the mixture must be managed as a hazardous waste. Ignitability is determined by a specific analytical method in a laboratory.

Testing Used Oil for Hazardous Waste Contamination

EPA has established specific methods for testing used oil for contamination. While an EPA-approved laboratory test would be required for a definitive determination, cooperatives have other options available. Because testing is not required by EPA and because certain types of contamination will still allow your cooperative to manage its used oil under the used oil regulations, you may use one of the following methods, rather than a more expensive test:

- Visually inspecting the oil for a sign of antifreeze, solvent or other substance that does not appear to be oil

- Using a “sniffer,” which is a hand held detector that the facility puts near the substance and the sniffer indicates whether the total halogens are higher than what is normal for used oil. The sniffer would detect high concentrations of gasoline or solvent mixed with the oil because gasoline and solvent give off more vapors that the sniffer can detect.

Acceptable Recycling Methods for Used Oil

Using used oil in cooperative space heaters

Used oil may be recycled (i.e., burned for energy recovery, or refined/ reprocessed). If used for energy recovery, your used oil may be burned in space heaters at your cooperative's auto repair shop, provided you burn only the oil you generate (or receive from "do-it-yourselfers"), the heater(s) has a design capacity of not more than 500,000 Btu per hour (most repair facilities have heaters with a design capacity between 100,000 and 300,000 Btu per hour), and the combustion gasses from the heater are vented to the outside air. Unless your repair facility is unusually large or is burning more oil than necessary to heat the repair shop, it is unlikely it would have a heater with a design capacity greater than 500,000 Btu per hour.

You may also send your used oil to an off-site energy recovery facility. Cooperatives should ensure that the facility receiving the used oil is EPA-approved (i.e., the facility has an EPA identification number). The used oil must be prepared for transportation to the recycling or energy recovery facility according to the requirements in Chapter 4, and must be transported by an authorized waste transporter (also must have an EPA identification number).

You can reuse your recycled used oil

Your cooperative's used oil also may be sent to a refiner or reprocessor for recycling. You may receive your recycled used oil back from the refiner/reprocessor for use as a lubricant, cutting oil, or coolant if you have such a need at your cooperative. The most effective way to accomplish this is to contract a tolling arrangement with your transporter. In this case, (and only in this case) you may use a transporter that does not have an EPA identification number, provided the contract indicates:

- The type of used oil and the frequency of shipments,
- That the vehicle used to transport the used oil to the processing/ rerefining facility and to deliver the used oil back to the shop is owned and operated by the processor/rerefiner, and
- The reclaimed oil will be returned to the generator.

Used oil that becomes contaminated by a hazardous waste must be disposed at a RCRA-permitted disposal facility. The hazardous waste must be prepared for transportation to the disposal facility according to the requirements in Chapter 4, and must be transported by a permitted waste transporter (i.e., has an EPA identification number).

Used oil recordkeeping

EPA does not require tracking or recordkeeping for used oil generation or shipments. However, it is recommended that your cooperative keep logs or other records of off-site shipments of used oil. Transporters, recyclers

and burners of used oil are subject to more stringent requirements. Thus, keeping records of off site shipments should help limit liability if a transporter, recycler, or burner mismanages your cooperative's used oil.

Used Oil Filters

Used oil filters may be managed in two ways. They may be managed as materials contaminated with used oil, or they must be completely drained and then either recycled for scrap metal or disposed as nonhazardous solid waste. Most facilities drain the oil from the filters and then dispose or recycle them. If your cooperative drains the oil from the filters, you must ensure that the filters are completely drained using one of the following EPA approved methods:

- Puncturing the filter anti-drain back valve or filter dome end and hot-draining for at least 12 hours, or
- Hot-draining and crushing, or
- Dismantling and hot draining, or
- Any other equivalent hot-draining method which will remove all the used oil in the filter.

You should be aware that some states may have different requirements for completely draining the oil filter. Check with your state for any requirements that apply to you. The used oil from the filter must be managed according the requirements described above, and your state's requirements.

Used Oil Contaminated Rags, Wipes, and Spill Cleanup Material

Used oil contaminated materials may only be disposed, recycled or burned for energy recovery. According to the used oil regulations, where the oil is potentially free flowing from the material (e.g., rags, wipes, or some absorbent materials), the material can be managed under the used oil requirements described above, or as RCRA wastes (i.e., they must be characterized as hazardous or non-hazardous and managed and disposed accordingly). Used oil contaminated material where there is no sign of free flowing oil, must be tested to determine if it is hazardous waste. If the material is hazardous, it must managed as RCRA waste. Many repair operations avoid the waste determination process by sending rags to a laundering facility for washing, rather than disposal.

3.4.5 Spent Solvents

EPA waste management regulations are applicable only to "spent solvents," or those that have been "generated" as waste. Solvents that are ***being used*** in a parts washer may be regulated under EPA air regulations or OSHA chemical storage regulations, but they are not regulated under RCRA (since they are not yet waste). Spent solvents are likely to be hazardous wastes, unless they are citrus or water-based (check the MSDS for your solvent to determine whether the spent solvent will be hazardous waste).

Criteria for regulating solvents under RCRA

For a chemical to be regulated under RCRA as an F-listed spent solvent, it must meet three criteria:

- It must be on the list of spent solvents identified as F001 through F005 in 40 CFR 261.31 (see Table 3-2).
- It must be present in the unused product at a concentration of at least 10 percent, or be present with other F-listed solvents in the unused product at a total concentration of at least 10 percent (check the MSDS).
- It must have been used as a solvent.

Table 3-2. 40 CFR §261.31 Listed Hazardous Waste Solvents (F001 through F005)

Industry and EPA Hazardous Waste Code	Hazard Code[1]	Name of Hazardous Waste	Type of Hazardous Waste	Description
F001	(T)	Tetrachloroethylene Trichloroethylene Methylene chloride 1,1,1-trichloroethane Carbon tetrachloride Chlorinated carbons	Spent halogenated solvent used in degreasing.	Spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	(T)	Tetrachloroethylene Methylene chloride Trichloroethylene 1,1,1-trichloroethane Chlorobenzene 1,1,2-trichloro-1,2,2-trifluoroethane Ortho-dichlorobenzene Trichlorofluoromethane 1,1,2-trichloroethane	Spent halogenated solvents	Spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003	(T)	Xylene Acetone Ethyl acetate Ethyl benzene Ethyl ether Methyl isobutyl ketone n-butyl alcohol Cyclohexanone Methanol	Spent non-halogenated solvents.	Spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F004	(T)	Cresols Cresylic acid Nitrobenzene	Spent non-halogenated solvents	Spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F005	(I,T)	Toluene Methyl ethyl ketone Carbon disulfide Isobutanol Pyridine Benzene 2-ethoxyethanol 2-nitropropane	Spent non-halogenated solvents.	Spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

1 T = Toxicity, I = Ignitability

Even if the spent solvent does not meet these criteria (and, therefore, is not a listed hazardous waste), the properties of the product or the contaminants that end up in the solvent through use may make the solvent hazardous by characteristic (see Section 3.1.4). Some solvents contain enough benzene or may accumulate enough metals to meet the toxicity characteristic.

Approved Solvent Disposal Methods

All generators are permitted to manage their hazardous waste solvents via a solvent recycling service, or dispose of them by an EPA-approved hazardous waste incinerator. The transporter of the hazardous waste solvents must have an EPA identification number. EPA also allows small quantity generators to mix hazardous waste solvent with used oil provided that the resulting mixture does not exhibit any of the characteristics of a hazardous waste (see Section 3.4.4). Conditionally exempt small quantity generators may mix characteristic or listed waste with used oil and manage the resulting mixture as used oil (see Section 3.4.4). However, keep in mind that many states do not permit mixing, even for CESQG's (see Section 3.4.4). Facilities that have prior written approval from their wastewater treatment facility may be permitted to dispose of hazardous waste solvent with facility wastewater.

USEFUL TIP

It is not recommended that you mix solvents with used oil unless you intend to burn the mixture in your cooperative's space heaters (see Section 3.4.4). EPA-approved haulers do not always accept solvent/oil mixtures, or may charge significantly more for transportation of mixtures than for segregated wastes (because the hauler may be required to manage the entire mixture as hazardous waste).

Contracting for Solvent Use and Disposal

Many cooperatives contract their solvent use and disposal with outside vendors. Contracting for your solvent use and disposal typically is worthwhile. While your cooperative is still the generator, it does not have to store the waste solvent, arrange for its disposal, prepare it for shipping to an approved, licensed solvent disposer, or complete and maintain the manifest for the shipment (although in practice, outside vendors often use the manifest as a tracking document for each shipment). While the solvent is in the washer, it is not considered a waste by EPA. The outside vendor is responsible for replacing the solvent in the parts washer and for disposing of the waste solvent.

While your cooperative is not required to maintain manifests if you have an arrangement with an outside vendor, the solvent must be reclaimed under a contractual agreement where following requirements must be met:

- The type of waste and frequency of shipments are specified in the agreement

- The vehicle used to transport the waste to the recycling facility and to deliver regenerated material back to the generator is owned and operated by the reclaimer of the waste

- The cooperative maintains a copy of the reclamation agreement in its files for a period of at least three years after termination or expiration of the agreement.

Currently (January 1997), one outside vendor contracts the use of several solvents, some that are typically hazardous (due to ignitability), and others that are not. The hazardous solvents typically are contained a different color parts washer than the nonhazardous solvents. To confirm whether the solvent contained in the parts washer is hazardous, check the Material Safety Data Sheet (MSDS) for the solvent being used (these should be provided by your vendor). The MSDS will indicate whether the solvent, once it is a waste, will have any of the characteristics of a hazardous waste, or will contain any materials that are listed wastes. Remember, by mixing the solvent with hazardous waste (such as pouring spent hazardous waste solvent in a non-hazardous waste solvent parts washer) will make the mixture a listed hazardous waste.

3.4.6 Used Antifreeze

Waste antifreeze has the potential to be a hazardous waste due to its potentially high pH (corrosivity characteristic) or its potential to have a high lead content (toxicity characteristic). Because waste antifreeze has the potential to be a hazardous waste, facilities must determine whether the waste antifreeze is hazardous or nonhazardous.

There are several good management practices that your cooperative should incorporate for your waste antifreeze. It should be noted that these management practices are not required by EPA (but they may be required by your state). They include labeling, segregation and containment (see Section 3.3.3).

How to Determine if Antifreeze Is Hazardous Waste

Using process knowledge to determine if used antifreeze is hazardous

Your cooperative can determine whether or not the antifreeze used in your vehicles is hazardous by laboratory testing of the antifreeze or by process knowledge. If your cooperative makes the hazardous/ nonhazardous determination solely by testing, you must test each batch of antifreeze changed from each vehicle serviced. If you use process knowledge, your determination must involve a demonstrated understanding of the potentially hazardous constituents in antifreeze. Such a demonstrated understanding could include a combination of the

information on the MSDS for the type of antifreeze used, a referral to a previous test that demonstrated that antifreeze from new vehicles does not contain metals from the cars, and having a procedure to ensure that any suspect antifreeze is segregated from antifreeze known not to be hazardous. Process knowledge can also be affirmed if your cooperative explains its approach to the State or EPA and they agree that your antifreeze is not a hazardous waste**.**

Functional indicators of antifreeze being hazardous waste

In addition to testing and process knowledge, there are two functional indicators that the antifreeze is, or is likely to be a hazardous waste. First, antifreeze would be considered hazardous waste if it is mixed with a hazardous waste (such as an F-listed solvent listed in Table 3-2, gasoline, or used oil). Second, antifreeze could be hazardous if it comes from an older vehicle where the antifreeze has been sitting for years and has picked up enough metals (primarily lead) to be characteristically hazardous for metals content.

Reclaiming/Recycling Antifreeze

To avoid having to manage and dispose of your antifreeze as hazardous waste, you can reclaim used antifreeze in a closed loop system, connected by piping, and return it to the vehicle it came from. EPA does not consider such reclaimed material to be a solid waste. Thus, even though the antifreeze may be hazardous, it is not considered to be a hazardous ***waste*** because the antifreeze is returned to its original use as a coolant. Closed loop antifreeze recycling systems are available that connect directly to the car radiator, filter the antifreeze and put it directly back into the car. Because these systems are considered closed loops, they avoid the waste characterization process for the reclaimed antifreeze. However, any filters in the recycling equipment do need to be characterized as hazardous or nonhazardous when replaced. Non-closed loop systems are available that connect to a used antifreeze storage drum. However, because these are not closed loop systems, the antifreeze in the drum may be considered hazardous waste.

Waste Antifreeze Disposal

If you do not recycle your waste antifreeze at your cooperative, it may be recycled off site, by an EPA-approved facility. If it is hazardous waste (because of its lead content), you must transport it by a transporter with an EPA identification number, and prepare it for transport according to the requirements in Chapter 4. Waste antifreeze that is mixed with other fluids must be characterized to determine if it is hazardous waste, and disposed accordingly. Non-hazardous waste antifreeze also may be disposed at a landfill that is authorized to accept waste antifreeze. Many

landfills have a tank designated for used antifreeze disposal. Used antifreeze may not be dumped with regular trash.

3.4.7 Used Shop Rags

Although EPA has no requirements specific to used shop rags or towels, rags or towels must be managed as hazardous wastes if they are contaminated with a hazardous waste, such as F-listed solvent, or the rags display a hazardous characteristic due to the presence of gasoline, or metals contaminated antifreeze. EPA allows auto repair shops to dispose of used rags by having them washed through a laundry service (see box), or disposing them through an EPA-licensed hazardous waste transporter and disposal facility. CESQGs that burn their used oil in a boiler to heat the shop may mix their used rags with the used oil being burned. CESQGs also have other disposal options as discussed in Section 3.3.1. Since states have the lead on rag issues, it is imperative that your cooperative understands your state's policy.

USEFUL TIP – RAG LAUNDERING

Many states do not consider rags going for laundering to be a hazardous waste (although a hazardous waste could be generated by the launderer). If the rag is not discarded, the facility is not subject to EPA hazardous waste requirements, even if rags are contaminated with hazardous waste. However, some states may consider rags to be solid waste, even if they are to be sent for laundering. Check with your state on requirements for management of these rags.

Used Rag Storage

Used rags contaminated with hazardous waste and destined for disposal (not destined for washing) must be stored according to the hazardous waste storage requirements applicable to your cooperative's generator status (see Section 3.3.3). There are no specific requirements for CESQGs, while SQGs must store their rags as described in Section 3.3.3. Although not required by EPA, used rags that are not considered a hazardous waste should be stored in a separate container from regular trash, such as a bucket, can, or barrel that only contains rags.

3.4.8 Non-PCB Electrical Equipment

Non-PCB means PCB concentration less than 50 ppm

Electrical equipment that has dielectric fluid containing less than 50 ppm PCBs is considered non-PCB (see Chapter 2). Non-PCB electrical equipment to be discarded should be drained, when practical, and the oil disposed separately from the carcass. Carcasses of non-PCB electrical equipment can be disposed in municipal solid waste landfills, or they may be sold to scrap and salvage dealers. Methods other than disposal in a landfill, such as recycling of the metal, are recommended because they are more protective of the environment. However, some caution should be exercised in selecting outside recycling vendors (because of the liability issues. Chapter 2 provides a list of vendors for recycling electrical equipment to be discarded.

USEFUL TIP

Dielectric fluid with concentrations of PCBs below 2 ppm are considered to have no PCBs, and could be managed and disposed as used oil (see Section 3.4.3).

How to deal with sealed electrical equipment

Sealed electrical equipment, such as capacitors, must be assumed to be PCB equipment unless they are specifically marked as non-PCB. Disposal of PCB items is discussed in Chapter 2 (Section 2.4.8). If they are specifically marked non-PCB, larger sealed items to be discarded should be drained, and the waste dielectric fluid and carcass disposed as discussed above. Non-PCB ballasts and small capacitors may be disposed as municipal solid waste. It is recommended that non-leaking ballasts or capacitors are first packed with absorbent packing material and sealed in containers.

USEFUL TIP

Cooperatives should be aware that some State laws prohibit disposal of these items in a municipal solid waste landfill. EPA is planning to amend the rules to limit the number of ballasts which may be disposed of as municipal solid waste.

Even though they do not contain regulated levels of PCBs (see Chapter 2), cooperatives should always be aware that non-PCB electrical equipment may contain other materials that qualify as RCRA hazardous waste because of their flammability or toxicity. If your equipment contains such materials, they must be managed, transported and disposed as hazardous waste once discarded.

LQGs and SQGs must determine if used lamps are hazardous waste or assume they are.

3.4.9 Mercury Lamps

Fluorescent light tubes and high intensity discharge (HID) lamps contain mercury. Mercury is a RCRA characteristic hazardous waste because of the toxicity of

USEFUL TIP

CESQGs do not have to characterize their fluorescent or HID lamps prior to disposal. CESQGs may dispose of these wastes in municipal solid waste landfills.

mercury. In addition, HID lamps may contain small amounts of lead, which also is a RCRA characteristic waste for toxicity. Since fluorescent light tubes and HID lamps are not listed hazardous wastes, and they are not excluded from the definition of hazardous wastes, it is the responsibility as a small (SQGs) or large quantity generators (LQGs) to determine if their fluorescent and HID lamps are characteristically hazardous waste, by having them tested for toxicity (using the TCLP test). CESQGs are exempt from this requirement (see box). If you have no knowledge of the lamp contents and do not test used fluorescent and HID lamps and prove them non-hazardous, you should assume they are hazardous waste and dispose of them accordingly.

You must handle and store waste lamps as hazardous waste unless they are determined not to be

Prior to disposal, tubes and lamps should be handled and stored as hazardous waste unless the determination is made that the lamps are non-hazardous. If they are non-hazardous, they can be disposed in any municipal solid waste landfill. If the lamps are hazardous they must be disposed in a hazardous waste landfill, or recycled. There are a number of facilities that will recycle fluorescent tubes and HID lamps. A list of these facilities can be found in Section 3.5.

POLLUTION PREVENTION TIP

Low mercury fluorescent lamps are manufactured by several companies. Use of these lamps could substantially reduce the potential for your waste fluorescent or HID lamps to be determined to be hazardous waste.

3.4.10 Leftover Paint

Leftover paint to be discarded is a reusable resource and should not necessarily be considered a waste product. There are a number of options for reusing leftover paint, including donating the paint (see box), or recycling it (see below). Keep in mind that waste paint may be considered a hazardous waste, and managed accordingly. To avoid having leftover paint, you should always buy paint to be used at your cooperative in the appropriate quantity, store it properly, and use it up or donate or exchange it before disposal or recycling is even considered.

USEFUL TIP - DONATING LEFTOVER PAINT

Left-over paint can be given to someone who has a need for the product. Contact local recreation departments, community service organizations, churches, schools, or theater groups. Many of these groups are pleased to accept “free” paint. Be sure that the paint you donate is in its original container with the label intact.

Usable latex (water-based) paint that you no longer need can either be donated (see box) or recycled (see below). Usable or unusable latex paint also can be disposed. Latex paints are not hazardous substances

and waste latex paint usually is not hazardous waste, but it is solid waste. To dispose of leftover latex paint, simply remove the lid and allow the paint to solidify completely in the can, then dispose of the paint and can in a solid waste landfill.

Oil- or solvent-based paints (also known as alkyd paints) have the potential to be hazardous waste when discarded. Review the MSDS for the paint, or the list of ingredients. If the paint can be considered to meet a hazardous waste characteristic, because of toxicity, flash point, etc. (this may be indicated on the MSDS) the waste paint should be managed and disposed as hazardous waste. If you have oil-based paint that is still usable, you can avoid the burden of managing, preparing for transport and disposing of it by donating it to someone (see box) or using it up completely (add another coat of paint to items you are painting). You can provide waste oil-based paint for use in fuel blending for waste-to-energy programs, but you will still have to store it as a hazardous waste, and transport it to the facility for blending. Waste-to-energy programs blend leftover solvent-based paint for use as fuel in cement kilns.

Reusing thinners or solvents

Paint thinners, or solvents can be reused by following a few simple steps. Allow the used solvent to sit in a closed container until the paint particles/residue settle out. Then pour off the clear liquid, which can be reused. The settled residue usually must be disposed as hazardous waste.

Recycling Used Paint

There are a number of options for recycling paint, mostly for latex paints. Solvent-based paint recycling is less common because of the complexity of the paint materials and the high cost of handling and recycling the paint compared to other alternatives, such as waste-to-energy programs. However, some companies recycle leftover solvent-based paints for resale as military gray for the naval ship fleet.

USEFUL TIP –
REUSING/RECYCLING PAINT

The National Paint and Coatings Association (NPCA) can provide you with information on reusing or recycling paint. You can find them on the internet at www.paint.org.

Typically, recycling latex paint can include:

- ***Paint Blending for Reuse***—This is a low-tech approach where leftover latex paint is blended with virgin materials to yield a new paint with a recycled content. Leftover paint makes up about

10–20 percent of the finished product. The resulting latex paint is generally intended for exterior use for anti-graffiti purposes.

- ***Paint Reprocessing***—This high-tech recycling typically requires careful quality control, and involves only latex paint.

Keep in mind, that unless you know it is not hazardous, waste oil-based paint destined for recycling still must be stored as hazardous waste at your cooperative, and transported as hazardous waste to the recycling facility. The exception to this case is if the paint is to be reprocessed. In this instance, the paint is still considered a product, not a waste, and therefore RCRA regulations do not apply to it.

3.4.11 Used Aerosol Cans

Aerosol sprays contain an active ingredient and a liquid or gaseous propellant that is packed under at least 40 pounds per square inch of pressure. These pressurized aerosol containers are explosive and may be flammable. The actual product propelled from the container can have a hazardous characteristic such as corrosiveness, toxicity, ignitability, etc.

It is the responsibility of the generator to determine if a waste aerosol can to be disposed is hazardous waste, and to recycle or dispose of it properly. Proper management of aerosol cans depends on the condition the can is in when it is to be disposed. Sometimes aerosol cans must be discarded before they are completely empty. A variety of reasons cause this to occur, including the spray mechanism no longer working as designed, or the propellant becomes spent before the product is completely used up. The following are criteria for helping you to determine whether your waste aerosol can is hazardous waste:

How to determine if your waste aerosol can is hazardous waste

- Any aerosol can that is completely emptied (i.e., does not contain propellant or product and is at atmospheric pressure) is not regulated as hazardous waste, even if it contained hazardous substances. Atmospheric pressure can be achieved by discharging all propellant.

- Any can that did not or does not contain any hazardous constituents that would be a listed or characteristic hazardous waste is not regulated as hazardous waste, regardless of whether it is emptied.

- Any can that did contain or does contain hazardous constituents that would be a listed or characteristic hazardous waste is subject to RCRA regulations unless the can is considered emptied. Some states allow you to puncture a partially emptied can and remove the constituents. If the constituents are hazardous, they must be managed as hazardous waste, but the can need not be. Check with your state to determine if they allow you to puncture your aerosol cans and dispose of the contents separately from the can. If you do puncture your aerosol can for this purpose, use extreme care. Some cans, especially those containing explosive products may explode when punctured.

USEFUL TIP

Some states consider waste aerosol cans to be universal waste. Check with your state to determine if this is the case, and what the universal waste regulations are for your state.

Disposal of non-hazardous waste aerosol cans

Waste aerosol cans that are not considered hazardous waste may be recycled as scrap metal, or landfilled. If a waste aerosol can contains hazardous waste, unless it can be considered universal waste by your state (see box) the can must be managed in full compliance with waste regulations, including storage, labeling and manifesting requirements discussed in Section 3.3, and Chapter 4).

WASTE MINIMIZATION TIP

Some types of aerosol cans can be refilled. For information on such cans, contact the vendors listed in Section 3.5.

3.4.12 Pole Yards/Pole Disposal

Currently, used arsenically-treated wood utility poles are exempt from the definition of RCRA hazardous waste. The regulations are less specific about used wood utility poles treated with creosote or pentachlorophenol (PCP). Typically, the creosote or PCP concentrations in waste wood are not high enough for the used wood utility poles to fail the TCLP, and the used poles are not considered hazardous waste. However, some states may have regulations that have more stringent limits on the concentrations of wood preservatives acceptable in utility poles to be disposed. You should check with your state to learn the acceptable concentration limits of wood preservatives in utility poles.

According to RCRA, you can dispose of used poles that have been arsenically-treated as solid waste in a municipal landfill. Utility poles that are disposed as hazardous waste must be managed and transported according to the regulations in Section 3.3 and Chapter 4. Many farmers

and ranchers want used utility poles. This is an acceptable form of recycling.

3.4.13 Management of Spill Cleanup Materials and Contaminated Media

If a listed hazardous waste is leaked, spilled or discharged to soil or water, the soil or water must be managed a hazardous waste as long as it "contains" the waste. EPA or your state sets the criteria for when soil or water no longer contains a listed waste. If a characteristic hazardous waste is leaked, spilled or discharged to soil or water, the soil or water must be managed a hazardous waste as long as it displays the hazardous characteristic. If the contaminated soil does not have the characteristic, and does not meet any other hazardous waste criteria, it would be considered soil and not waste. Close cooperation with your state agency is essential in these cases.

In general, if the material leaked, spilled or discharged is hazardous waste, the materials used to cleanup the spill will be hazardous waste, and must be managed and disposed as such. You can determine whether the material spilled is hazardous waste from the MSDS. If the MSDS for the material is not available, you must either use process knowledge of the material, or have the cleanup material tested for hazardous waste characteristics. If the material spilled is not hazardous, the cleanup material also will not be hazardous waste.

3.5 RESOURCES

3.5.1 References

Colorado Department of Public Health and Environment. *Management of Waste Aerosol Cans*. Hazardous Materials & Waste Management Division, Compliance Bulletin Hazardous Waste.

North Carolina Department of Environment, Health, and Natural Resources. *Management of Aerosol Cans for Businesses and Industries*. Waste Reduction Fact Sheet. North Carolina Division of Pollution Prevention and Environmental Assistance.

NRECA, 1987. *Guide for Disposal of Hazardous Substances*.

U.S. EPA. 1993. *Fluorescent Lamp Disposal*. Office of Air and Radiation. EPA 430-F-93-002.

U.S. EPA. 1994. *Lighting Waste Disposal*. EPA's Green Lights Program. January, 1994.

U.S. EPA, 1996. *Understanding the Hazardous Waste Rules – A Handbook for Small Businesses – 1996 Update*. Office of Solid Waste. Available online at http://www.epa.gov/epaoswer/hazwaste/aqg/handbook/sqg_bk. txt

U.S. EPA. *The Universal Waste Rule*. A fact sheet on the Universal Waste Rule. Available online at http://www.epa.gov/epaoswer/hazwaste/id/ univwast.htm

3.5.2 Internet Resources and Hotlines

USEPA RCRA Hotline: (800) 424-9346
Staff will answer questions on RCRA regulations in complete confidence.

PRO-ACT: http://www.afcee.brooks.af.mil/pro_act/main
This site provides a series of a pollution prevention fact sheets developed by the U.S. Air Force staff at Brooks AFB.

U.S. EPA Home Page: http://www.epa.gov
This site provides access to information on all EPA programs and offices. The Office of Solid Waste (OSW) is the source for information on RCRA requirements.

"Enviro$ense" Home Page: http://es.inel.gov
This site is part of EPA's internet site. If you can not access it directly at the address above, you can access it from the EPA home page by clicking on "Other Resources" and then "Bulletin Board Systems." The "Enviro$ense" site was established in an attempt to provide a single repository for pollution prevention, compliance assurance, and enforcement information and data bases. Included are pollution prevention case studies, technologies, points of contact, environmental statutes, executive orders, regulations, and compliance and enforcement policies and guidelines.

3.5.3 Waste Determination Guide

Table 3-3 lists typical waste characterization. Where not otherwise specified, nonhazardous solid waste may be disposed in a RCRA-approved landfill (typically a municipal or commercial landfill), or recycled.

Table 3-3. Waste Determination Guide

Waste Stream	Typical Category Prior to Disposal if Not Mixed with Other Hazardous Waste	If Not Mixed and Disposed in Landfill	If Not Mixed and Recycled
Used Oil	Used Oil	Depends on characterization	Used Oil

Used Oil Filters	Nonhazardous Solid Waste **If Completely Drained**	Nonhazardous Solid Waste **If Completely Drained**	Used Oil - If Not Drained
Used Transmission Fluid	Used Oil	Depends on characterization	Used Oil
Used Brake Fluid	Used Oil	Depends on characterization	Used Oil
Used Antifreeze	Depends on Characterization	Depends on Characterization	Depends on Characterization
Spent Listed Solvents	Hazardous Waste	Hazardous Waste	Hazardous Waste
Spent Citrus Solvents	Depends on characterization	Depends on characterization	Depends on characterization
Lead Acid Automotive Batteries	Not a Solid Waste If Returned to Supplier	Hazardous Waste	Hazardous Waste/ Universal Waste
Shop Rags Used for Oil	Used Oil	Depends on characterization	Used Oil
Shop Rags Used for Listed Solvent or Gasoline Spills	Hazardous Waste	Hazardous Waste	Hazardous Waste
Oil Spill Absorbent Material	Used Oil	Depends on Characterization	Used Oil
Spill Material for Listed Solvent and Gasoline	Hazardous Waste	Hazardous Waste	Hazardous Waste
Spilled or Unusable Paints and Thinners	Hazardous Waste	Hazardous Waste	Hazardous Waste
Used Tires	Nonhazardous Solid Waste	Nonhazardous Solid Waste	Nonhazardous Solid Waste

3.5.4 RCRA Hazardous Waste Landfills and Recycling Centers for Fluorescent Light Tubes

The following are commercially permitted hazardous waste landfills operating as of October 1991:

Name	Address	Telephone
CESOS International	P.O. Box 340 LPO Niagara Falls, NY 14302	(716) 282-2676
CESOS International	5092 Aber Road Williamsburg, OH 45176	(513) 720-6114
Chemical Waste Management	Box 55 Emelle, AL 35459	(205) 652-9721
Chemical Waste Management	Box 471 Kettleman City, CA 93239	(209) 386-9711
Chem-Security Systems Incorporated	Star Route, Box 9 Arlington, OR 98712	(503) 454-2643
CWM Chemical Services Control, Inc.	Box 200 Knolls, UT 84074	(716) 754-8231
Envirosafe Services Inc. Of Idaho	P.O. Box 16217 Boise, ID 83715-6217	(800) 274-1516

U.S. Ecology, Inc.	Box 578 Beatty, NV 89003	(702) 553-2203
U.S. Pollution Control, Inc. Grayback Mountain	8960N Hwy 40 Lake Point, UT 84074	(801) 534-0054
Lamp Recycling Services		
Lighting Resources, Inc.	Pomona, CA	(714) 622-0881
Mercury Technologies Corporation	San Rafael, CA	(415) 499-1000
Mercury Recovery System	Monrovia, CA	(818) 301-1372
Nine West Technologies	Newark, NJ 07102	(201) 623-0007
Quick Silver Products, Inc.	Brisbane, CA	(415) 468-2000

Companies listed in this section are not endorsed by the EPA or the Green Lights Program. EPA does not screen listed companies and cannot confirm the methods these may use in their recycling process.

4. HOW DO I PREPARE MY HAZARDOUS WASTES AND MATERIALS FOR TRANSPORT?

If you generate hazardous waste and/or other hazardous materials (see box), when you ship them off site for disposal, treatment, or recycling, you will have to follow specific requirements to prepare these materials for shipment. The goal of this chapter is to provide a basic understanding of your responsibilities for preparing your hazardous materials for shipping. It is organized to answer the following questions:

- What transportation regulations apply to my shipment(s) of hazardous materials?
- How do I comply with the transportation regulations?

DEFINITIONS – HAZARDOUS MATERIAL

The DOT definition of hazardous material is a substance or material...capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated. The term includes hazardous substances as defined in CERCLA/EPCRA (see Chapter 6), hazardous wastes as defined in RCRA (see Chapter 4), marine pollutants, and elevated temperature materials. PCB waste (as defined in TSCA - see Chapter 2) falls within the definition of hazardous substances (and thus, hazardous materials) under DOT regulations.

USEFUL TIP

If you are authorized to transport hazardous waste, there are additional requirements you must comply with, that are not addressed in this document.

RESOURCES

This chapter contains technical and regulatory language. If you have any questions, please call your statewide association, cooperative lawyer, state environmental agency (see resources section), DOT's Hazardous Materials Information hotline at 1-800-467-4922, or EPA's RCRA hotline at 1-800-424-9346.

This chapter is not a description of all shipping and transportation requirements because the requirements will depend on the material/waste you ship or transport, and your State may have additional or more stringent requirements. For specific requirements on the material or waste, consult either the U.S. Department of Transportation (DOT) Hazardous Materials Information hotline (see box) or other appropriate contacts. In most cases, states do not have additional requirements pertaining to the preparation of hazardous material for shipment, but they may have additional requirements governing the transportation of those materials.

4.1 WHAT TRANSPORTATION REGULATIONS APPLY TO MY SHIPMENT?

DOT regulations that apply to shipping hazardous materials.

The major law dealing with shipping and transportation of hazardous materials is the Hazardous Materials Transportation Act (HMTA) originally passed in 1974. The HMTA was amended in 1990. These amendments are known as the Hazardous Material Transportation Uniform Safety Act (HMTUSA). Together, the HMTA and the HMTUSA form the Federal hazardous materials transportation laws.

TRAINING REQUIREMENTS

Each employee involved in handling hazardous materials for transportation must be trained in accordance with 49 CFR 172.700-704 to ensure proper loading, unloading, handling, storing, and transporting hazardous materials. Training must include general awareness, safety training, and be function specific. Initial training must be conducted followed by periodic updates. Contact DOT at 1-800-467-4922 for free training materials.

The federal hazardous materials transportation laws are administered and enforced by DOT with the support of state transportation agencies. HMTA/HMTUSA contain requirements to identify, package, mark, label, and placard a shipment of hazardous materials. HMTA/HMTUSA also contain requirements for manifests (a type of shipping paper - see below), emergency responses to spills, and reporting transportation incidents.

Other regulations for shipping hazardous materials.

The Resource Conservation and Recovery Act (RCRA), which deals with hazardous waste (see Chapter 2), contains requirements (in addition to HMTA/HMTUSA) specifically for shipping and transporting hazardous waste. Finally, the Toxic Substances Control Act (TSCA) contains some requirements for the transportation of polychlorinated biphenyls (PCBs).

4.2 HOW DO I COMPLY WITH THE REQUIREMENTS FOR SHIPPING HAZARDOUS MATERIALS

The regulations contain requirements for manifesting, packaging, marking, labeling, and placarding shipments of hazardous materials. The specifics of these requirements vary depending on the type and quantity of material in the shipment. Manifests are discussed in Section 4.2.1, and completion of the manifest is discussed in Section 4.2.3.

The key to identifying all appropriate requirements for a shipment of hazardous material depends on the accurate determination of the proper shipping description for that material. Determining the proper shipping description is essential because it is required for completing the manifest,

and to determine the type of shipping container, and the marking and labeling requirements for that container. These requirements are discussed in Section 4.4. Establishing the shipping description for hazardous materials is discussed in Section 4.2.2. The process can be complex and lengthy, however, once the proper shipping description is determined, identifying the packaging, marking, and labeling requirements becomes fairly easy.

4.2.1 Manifests

One requirement for most shipments of hazardous materials is the completion of a manifest (also known as shipping papers). The regulations indicate when a manifest is not required for shipping your hazardous materials.

What is a manifest?

A manifest is a multicopy form that serves as the official document used to identify and track the shipment being transported. Each copy goes to a different entity (the shipper, the transporter, and the treatment/disposal facility) involved in a shipment of hazardous material (see below).

It is the responsibility of the shipper to properly prepare the manifest. You are required to properly describe each type of hazardous material you intend to ship and the quantity, and include this information on your manifest. Sections 4.2.2 and 4.2.3 provide you with the information you need to describe your hazardous materials, and to complete the manifest. RCRA requires that a specific type of manifest, called a Uniform Hazardous Waste Manifest (EPA form 8700-22), be used for shipments of hazardous waste.

You can obtain blank copies of manifests from several sources. To determine the best source to obtain the form, use this system:

How to obtain blank copies of manifests.

- If the state to which you are shipping your material to has its own manifest, you must use that manifest form (your transporter should know which manifest form is required). Contact the hazardous waste management agency of that state, your transporter, or the waste treatment/disposal facility to obtain manifest forms.

- If the state to which you are shipping your material does not have its own manifest, use the manifest of the state in which your material was generated. Contact your transporter or your state hazardous waste agency for blank forms.

- If neither state requires a state-specific manifest, you may use the “general” Uniform Hazardous Waste Manifest (EPA Form 8700-22).

Copies are available from some transporters and treatment/ disposal facilities, or they may be purchased from some commercial printers.

Manifests require a signature to certify that the shipper has personally confirmed that:

- The manifest is complete and accurately describes the shipment (i.e., shipping description is correct)
- The shipment is ready for transport (i.e., appropriately packaged, marked, and labeled)
- You have reduced the amount and hazardous nature of your material to the greatest extent possible (within your budget constraints).

Be sure you receive your signed copy of the manifest from the facility taking your material.

When the shipment is received by the transporter, the transporter must provide you with a signed copy of the manifest. Keep this copy as proof that the hazardous material was shipped from your facility, and as a record of the facility that was to receive your material. When the shipment reaches its final destination, the treatment/disposal facility must sign the manifest, provide a signed copy to the transporter, and send a signed copy to your cooperative to confirm receipt. It is important that the treatment/disposal facility provide you with your signed copy as proof that the shipment made it to the final destination. If you do not receive a signed copy of the manifest from the destination facility within a specified period of time (35 days for a large quantity hazardous waste generator; 60 days for a small quantity hazardous waste generator), you may need to file an exception report with EPA and state environmental agencies. (This is a situation you may never encounter. If you do, please contact EPA and your state environmental agency for further information.) The signed copy of the manifest must be kept on file for 3 years.

4.2.2 How Do I Determine the Proper Shipping Description?

Determining the proper shipping description of a hazardous material for shipping and transportation involves identifying several attributes of the hazardous material. These attributes depend on the physical/chemical characteristics of the material. Once you determined the shipping description for a specific material, it will always be the same unless the material or regulation changes.

The necessary information for determining the shipping description should be readily available from the product's Material Safety Data Sheet

(MSDS)(or from a waste profile sheet if required by the hazardous waste management facility). The proper shipping description consists of the following elements:

Proper shipping description elements.

- Proper shipping name
- Hazard class
- UN/NA identification number
- Packing group, if required.

The following sections describe how each of these elements can be determined.

Proper Shipping Name

The Hazardous Materials Table

There is a unique feature of the hazardous materials transportation regulations known as the Hazardous Materials Table (HMT). The Hazardous Materials Table (HMT) lists those materials and classes of materials designated as hazardous under HMTA/HMTUSA. It can be found in 49 CFR 172.101. The HMT provides all the elements of a proper shipping description listed above for many materials. Table 4-1 depicts sample entries of the HMT for flammable liquids, PCBs and toluene.

How to read HMT.

Column 2 of the HMT lists the authorized, proper shipping name in alphabetical order. In selecting a proper shipping name to describe a material, the name in the column that most accurately identifies the material is the name to be used.

Use hierarchy to determine shipping name for mixture of materials.

For example, if the material to be shipped is composed only of toluene, the proper shipping name would be “Toluene.” However, if the material is a mixture of toluene and benzene, there is no listing in column 2 of the HMT for toluene/benzene mixture. Therefore, the selection of the proper shipping name must follow the hierarchical approach outlined below, which decreases in specificity (1 is the most specific, 5 is the least specific). Remember, the most specific, accurate name must be used.

Table 4-1. Partial example HMT Entry for Flammable Liquids, PCBs and Toluene

(1) Symbol	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard Class or Division	(4) Identification Numbers	(5) Packing Group	(6) Labels Required	(7) Special Provisions	(8) Packaging (§173xxx)			(9) Quantity Limitations		(10) Vessel Stowage	
							Exceptions (8A)	Nonbulk packaging (8B)	Bulk packaging (8C)	Passenger aircraft /rail (9A)	Cargo aircraft only (9B)	Location (10A)	Other (10B)
	Flammable liquids, n.o.s.	3	UN1993	I II III	3 (Flammable liquid)	T42 T8, T31 B1, B52, T7, T30	150	201 202 203	243 242 242	1L 5L 60L	30L 60L 220L	E B A	
A W	Polychlorinated biphenyl (PCB)	9	UN2315	II	9 (Miscellaneous)	9, 81	155	202	241	100L	220L	A	34
	Toluene	3	UN1294	II	3 (Flammable liquid)	T1	150	202	242	5L	60L	B	

Explanation of Columns

Column 1 = Notes whether special regulations apply to the material , including:
+ = the designated proper shipping name and hazard class listed in the HMT must be used.
A or W = subject to regulation only when transported by air (A) or water (W).
D = the proper shipping name as shown is acceptable only for domestic shipments.
I = the proper shipping name as shown is acceptable only for international shipments.
Column 2 = Lists the proper shipping name of the hazardous material.
Column 3 = Depicts the numerical hazard class or division number of the entry that must be included on the proper shipping name.
Column 4 = Depicts the hazard identification number of the entry that must be shown on the shipping page exterior of the packages.
Column 5 = Depicts the packing group assigned to the entry. Note that for Flammable Liquids n.o.s., three different packing groups are listed, and associated requirements for each packing group are provided in subsequent columns
Column 6 = Depicts label(s) required for packaging.
Column 7 = Lists any special conditions applicable to the entry
Column 8 = Specifies applicable sections for exceptions (8A), nonbulk packaging requirements (8B), and bulk packaging requirements (8C).
Column 9 = Specifies maximum quantities that may be offered for transportation by passenger-carrying aircraft or rail car (9A) or by cargo aircraft only.
Column 10 = Vessel stowage requirements

1. Listing by the material's specific chemical name (e.g., toluene).

2. Listing by the chemical family name (n.o.s.)[1] (e.g., alcohol, n.o.s.).

3. Generic listing by the material's end-use description (e.g., compounds, cleaning liquid).

4. Generic listing by the n.o.s. end-use description (e.g., insecticide, liquid, n.o.s.).

5. Generic listing by n.o.s. hazard class description (e.g., flammable liquid, n.o.s.). Hazard class determination is discussed below.

How to follow hierarchical approach to choosing proper shipping name.

HMTA/HMTUSA requires that there be only one proper shipping name per entry. Because toluene and benzene are each a proper shipping name, they may not be used together. In reviewing the above hierarchy, the only appropriate description for the toluene/benzene mixture is number 5, generic listing by n.o.s. hazard class description. According to the HMT, both toluene and benzene have a designated hazard class of flammable liquid, which makes that the correct choice for this example of a mixture of toluene and benzene. Furthermore, HMTA/HMTUSA requires that for mixtures of hazardous materials that have a generic n.o.s. designation, the technical names of at least two components that contribute most to the hazards of the mixture be listed. In this example, both toluene and benzene, which are the technical names for these materials, are listed in parentheses. For hazardous waste, the waste code (e.g., D001, see Section 3.1.3) may be used to identify the substance. Therefore, the proper shipping name is:

USEFUL NOTE

Only those names listed in Roman type (non italics) are authorized shipping names, where as the *italicized* names are to be used primarily as finding aids and cannot be used as the shipping name.

Flammable liquid, n.o.s. (Toluene and Benzene)

[1] n.o.s. means "not otherwise specified."

Hazard Class

Under HMTA/HMTUSA, materials are defined as hazardous because of their potential danger to public health during transportation. The hazards are categorized into nine classes listed below:

There are nine hazard classes.

- Class 1 Explosives
- Class 2 Gases
- Class 3 Flammable and Combustible Liquids
- Class 4 Flammable Solids and Spontaneously Combustible Materials
- Class 5 Oxidizers and Organic Peroxides
- Class 6 Poisonous and Infectious Materials
- Class 7 Radioactive Materials
- Class 8 Corrosives
- Class 9 Miscellaneous

For most materials, the hazard class is listed in Column 3 of the HMT. For toluene, the HMT specifies that the hazard class is Class 3 – Flammable Liquid. For PCB, the hazard class is Class 9 – Miscellaneous. The above list is useful if the material you want to ship is not specifically listed in the HMT. The MSDSs should provide you with enough information to determine the class of the material if it is not listed on the HMT. It should be noted that these hazard classes are not listed in order of the relative hazard they pose.

Determining hazard class for mixtures.

The situation becomes more difficult if the material to be shipped is a mixture of two or more hazardous materials. Previously, a mixture of two hazardous materials, toluene and benzene (which happen to have the same hazard class), was discussed. But what if the hazard classes are different? For example, what is the hazard class of a mixture of toluene and liquid methyl parathion (a pesticide, which has a designated hazard class of Class 6 – Poisonous and Infectious Materials)? DOT has established a protocol for shipments containing more than one hazard. This protocol is based on a hazard hierarchy (discussed in 49 CFR 173.2a) because some hazard classes present a more significant hazard during transportation. Concerning our example above, because the hierarchy in 49 CFR 173.2a deems a poison to be more hazardous than flammable liquids, the hazard class would be Class 6 – Poisonous and Infectious Materials (Division 6.1), as well as the proper shipping name. And, as discussed previously, the technical names of each of these materials—methyl parathion and toluene—would appear in parentheses after the proper shipping name.

Identification Number

Column 4 of HMT provides I.D. number.

Each hazardous material to be shipped must have an identification number. This number must appear on the manifest and packaging. Identification numbers can be found in Column 4 of the HMT (see Table 4-1), and can be determined based on the proper shipping name. For PCB and toluene, the HMT specifies that the identification numbers are UN2315 and UN1294, respectively. For the toluene/benzene mixture, the proper shipping name of this material is Flammable Liquid n.o.s., and the identification number is UN1993 (since that is the identification number listed in the HMT for "flammable liquids").

Packing Group

To determine the appropriate packing group, Column 5 of the HMT is consulted. In Column 5, the appropriate packing group (I, II, or III) is specified for each entry. The packing group corresponds to the degree of danger posed by the material for shipping purposes. Packing Group I presents the greatest danger, Packing Group II presents a medium danger, and Packing Group III presents the least danger. For both PCB and toluene, the HMT specifies that the Packing Group is II. For mixtures of hazardous materials, the packing group for the more dangerous material in the mixture is the one to select. In the example of toluene and methyl parathion mixture, the packing group would be II because both have that packing group on the HMT.

4.2.3 How Do I Prepare My Hazardous Material Shipment?

After determining the proper shipping description and obtaining the manifest, there are specific requirements that must be addressed before a shipment may be offered for transportation. These are:

- ***Completing the manifest***—You must provide the proper shipping description for the hazardous material in the shipment, as well as information on your cooperative (i.e., the shipper), the transporter, and the designated facility to receive the shipment;

- ***Packaging***—The proper package (e.g., drum) for the contents must be selected and obtained;

- ***Marking***—The package must be marked properly;

- ***Labeling***—The package must be labeled properly; and

- ***Placarding***—The proper placard must be obtained and presented to the transporter.

How Do I Complete My Manifest?

As discussed in Section 4.2.2, the proper shipping description of the hazardous material must use the following sequence:

Proper Shipping Name–Hazard Class–Identification Number–Packing Group

For our example:

Toluene, 3, UN1294, II

The proper shipping description must appear on the manifest. In addition, the following information also must be completed on the manifest for hazardous material:

Additional information required on manifest.

- Shipper's EPA identification number (unless the shipper is a conditionally exempt small quantity generator (see Chapter 3 for more information on generators);
- Shipper's name and mailing address;
- Unique manifest document number;
- Transporter's company name and EPA identification number;
- Designated receiving facility's name, address, and EPA identification number;

USEFUL TIP

Transporters, recyclers, and waste treatment/disposal facilities may require additional information. Check with them before you prepare your hazardous material shipment. States may also have additional requirements that must be followed. Your hazardous waste hauler or disposal firm often is your best source for packing and shipping information, or call DOT's Hazardous Materials Information Hotline at 1-800-467-4922. If you are shipping waste, you can also call the RCRA hotline).

- Weight of each material type and number and type of containers;
- Special handling instructions;
- Certification by the generator for waste minimization unless the generator is a conditionally exempt small quantity generator;
- Signatures by the appropriate parties; and
- Emergency response information (see Section 4.2.4).

If you have more than 4 separate packages of different hazardous materials, you must attach continuation sheets onto your manifest.

How Do I Package My Hazardous Materials for Shipment

As with most other transportation requirements, the selection of the proper packaging depends on the selection of the proper shipping name. For PCB and toluene, the HMT specifies that the packing group is II. (This was found in Column 5 of the HMT.)

USEFUL TIP

Contact the hazardous material management facility where you are shipping your material to determine what type of containers they require. Some facilities use specific containers depending on how they treat or dispose of the material.

Selecting a container.

Note: PCB transformers, bushings, and capacitors are their own containers.

This means that when a container is purchased to store or transport PCB or toluene, the DOT-required manufacturer's mark must specify that it is appropriate for Packing Group II, which is designated as a "Y" (this will appear on the top or bottom of the package). In addition to the Packing Group, you will also need to select a container appropriate for the quantity and physical nature of the material and where it is being shipped. For example, if the material is a waste, the permitted hazardous material management facility may require specific packaging because of the management method. Containers are available from many vendors, transporters, or management facilities.

How Do I Mark My Containers?

It is the responsibility of the shipper to properly mark each package of hazardous materials for transportation. Marking means placing on the outside of a shipping container one or more of the following: the shipping description, instructions, cautions, and/or weight. Shipping description is discussed in Section 4.2.2. Each container of 110 gallons or less of hazardous materials must be marked with package markings that contain instructions or cautions applicable to the material the package contains. Examples of possible instructions or cautions for packages of hazardous materials to be shipped are shown on Figure 4-1.

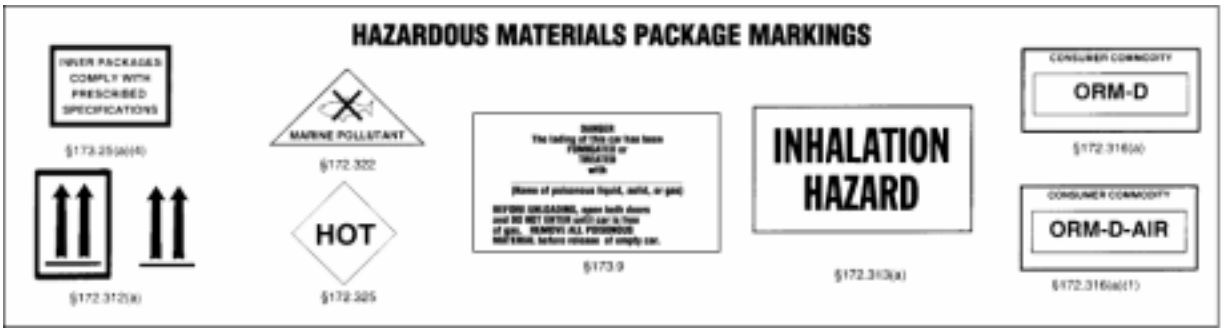

Figure 4-1. Example Hazardous Materials Package Markings

Special Marking Requirements for Hazardous Substances

Hazardous materials that meet the definition of hazardous substances require special notation within the shipping description on the manifest and on the container. For a material to be designated as a hazardous substance under HMTA/HMTUSA, the following criteria must be met:

How to determine if your material is a hazardous substance.

- It is listed as a hazardous substance in Appendix A to 49 CFR 172.101, and
- The quantity, in one package, equals or exceeds the designated reportable quantity (RQ) listed in Appendix A to 49 CFR 172.101 for each different substance in that package.

For example, toluene is listed as a hazardous substance in Appendix A to 49 CFR 172.101, and the designated RQ is 10,000 pounds. Therefore, 10,000 lbs of toluene would have to be in a single container for that particular container of toluene to be designated a hazardous substance, which is very unlikely for cooperatives. However, other materials have a much lower RQ. Benzene, for example, has an RQ of 10 pounds, and PCBs have an RQ of only one pound. Thus, if any container of benzene/ toluene mixture contained more than 10 pounds of benzene, or if one

pound or more of PCBs is in any package, these particular packages would be classified as hazardous substances.

Materials that are hazardous substances must have the letters "RQ" placed in the front of the shipping description on the manifest and on the container. For example, if one or more pounds of PCBs are in a package, the proper shipping description is:

RQ polychlorinated biphenyls, 9, UN2315, II

Special Marking Requirements for Hazardous Waste

You must use a hazardous waste label when shipping hazardous waste.

If the material to be shipped is a hazardous waste, the word "Waste" must be placed in front of the proper shipping name marked on containers and the manifest. If a shipper uses a hazardous waste label as shown in Figure 4-2, the shipping description on the container does not have to include the word "waste."

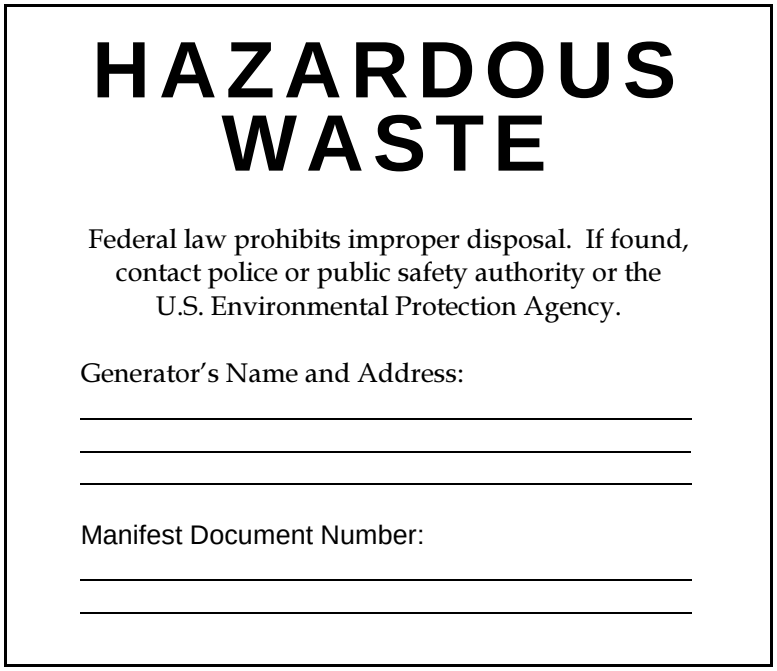

Figure 4-2. Example of Hazardous Waste Label

Shipping descriptions for waste PCB and toluene, would be:

Waste Toluene, 3, UN1294, II

Waste PCB, 9, UN2315, II

Labeling

You may be required to use multiple labels.

The labeling of packages of hazardous materials is the responsibility of the shipper. Packaging labels, color-coded and diamond-shaped, provide symbolic representations of the hazards associated with the contents. The required labels, which are shown in Figure 4-3 (not pictured here, go to Internet site: hazmat.dot.gov), are listed in Column 6 of the HMT. The label should be affixed to the package near the marking (the proper shipping description). Because it is not unusual for hazardous materials and waste to be a mixture of numerous hazardous components, these components may have different hazard classes. Thus, for each component of a mixture, if the HMT requires a label for the hazard class of that component, the label for that hazard class must be placed on the container. Column 6 of the HMT also prescribes cases where multiple labels are required for an individual listing. Multiple labels must be located next to each other.

Placards

You must provide placards, for your transporter, unless the transporter already has them.

Placards are large, diamond-shaped color-coded signs that are placed on the outside of transport vehicles indicating the hazards of the cargo. All motor vehicles, rail cars, and freight containers carrying hazardous material in any hazard class identified in Figure 4-4 (not picture here, go to Internet site: hazmat.dot.gov), or any hazardous waste weighing more than 1,000 pounds in hazard classes identified in Figure 4-4, must display the specified placard shown for that class or weight. Placards are a joint responsibility between the shipper and transporter. Shippers must provide the placards and the transporter is responsible for affixing the placards to the vehicle. (Many transporters already have the appropriate placards; it is recommended that shippers check transporters' needs ahead of time.)

PCB TRANSPORTATION TIP

For transport vehicles carrying one or more PCB transformers or 99.4 lbs of PCB liquid with a concentration of 50 p.m. or greater, the transport vehicle must have a special PCB label as shown in Figure 2-1 (see Chapter 2).

4.2.4 Emergency Response Information

Each shipment of hazardous material must have seven specific pieces of emergency response communication information. The information is usually carried by the transporter in the form of a DOT Guidebook called the *North American Emergency Response Guidebook* (Carrie 1996). A MSDS may also be used, provided that the following seven specific pieces of emergency response information are included:

- Proper shipping description (described in Section 4.2.2)
- Immediate hazards to health
- Fire and explosion risks
- Immediate precautions to be taken
- Immediate methods to be taken for handling fires
- Initial methods for handling spills or leaks
- Preliminary first-aid measures.

This information is also required to be placed at loading docks and where materials are stored incidental to transportation. Although it is the responsibility of the shipper to prepare the emergency response information, it is the responsibility of the transporter to ensure that this information accompanies the shipment. Shippers are also required to provide an emergency response telephone number on the manifest. This information must be displayed as EMERGENCY CONTACT:

(xxx) xxx-xxxx. The telephone number may be the number of any person or organization capable of, and accepting responsibility for, providing emergency response and accident information during time of transportation. It can be an employee, designee of the shipper, or a private company offering this service for shippers. One such organization, Chemtrec (operated by the Chemical Manufacturers Association), offers this 24-hour service for a fee. For further information contact 1-800-262-8200.

4.3 RESOURCES

4.3.1 Bibliography

Carrie, J.V. 1996. *North American Driver's Guide to Hazardous Materials*. Prepared for American Trucking Association.

U.S. Department of Transportation. *Hazardous Materials Transportation Training Modules: Compliance and Enforcement*. (CD-ROM) U.S. Department of Transportation, Research and Special Programs Administration. OHMIT-DHM-50

U.S. Department of Transportation. February 1994. *DOT Chart 10, Hazardous Materials Marking, Labeling and Placarding Guide*. U.S. Department of Transportation, Research and Special Programs Administration. OHMIT/DHM-51

American Trucking Association. *Hazardous Waste Regulations, A Handbook for the Trucking Industry*. (This is a very useful reference for shippers of hazardous materials, as well.)

American Trucking Association. *Driver's Guide to Hazardous Materials*.

4.3.2 For Further Information

Internet Sites

http://hazmat.dot.gov – Home page for Office of Hazardous Materials Safety.

http://www.trucking.org – American Trucking Association Home page.

E-Mail

Training@rspa.dot.gov – To obtain a copy of the Department of Transportation Training Modules.

Hotlines

DOT Hazardous Materials Info Line	1-800-467-4922
EPA RCRA Hotline	1-800-424-9346

4.3.3 Regulatory Resources

Please see Chapter 1 for a list of U.S. EPA Regional Offices and State Hazardous Waste Agencies.

4.3.4 Compliance Checklist

The following is a brief, concise compliance checklist that will help you comply with the transportation regulations.

Proper Shipping Description

Are the physical and chemical characteristics of the material accurately identified?	Yes ☐ No ☐
Has the proper shipping name been selected?	Yes ☐ No ☐
Has the hazard class or division been identified?	Yes ☐ No ☐
Has the UN or NA identification number been identified?	Yes ☐ No ☐
Has the packing group been determined?	Yes ☐ No ☐
Does the material meet the definition of a hazardous substance?	Yes ☐ No ☐
If so, have the special provisions been met?	Yes ☐ No ☐
Is the material defined as polychlorinated biphenyls?	Yes ☐ No ☐
If so, have the special provisions been met?	Yes ☐ No ☐

Packaging

Has the proper packaging been obtained?	Yes ☐ No ☐

Marking

Is the package adequately marked with proper shipping name?	Yes ☐ No ☐
Is the package adequately marked with proper address?	Yes ☐ No ☐
Is the package adequately marked with proper identification number?	Yes ☐ No ☐
Is the material in the package a hazardous substance?	Yes ☐ No ☐
If yes, is the package adequately marked with proper RQ?	Yes ☐ No ☐
Is the package adequately marked with proper orientation arrows?	Yes ☐ No ☐
Is the package adequately marked with proper hazardous material designation?	Yes ☐ No ☐

Labeling

Has the proper label(s) been identified and affixed?	Yes ☐ No ☐

Manifest

If the shipment is hazardous waste, has a uniform hazardous waste manifest been obtained?	Yes ☐ No ☐
Are there enough copies for all entities involved in the shipment?	Yes ☐ No ☐
Is a continuation sheet necessary (i.e., more than four materials being shipped)?	Yes ☐ No ☐
Has a unique manifest document number been listed?	Yes ☐ No ☐
Has each material's proper shipping description (name, hazard class, identification number, packing group) been noted on the manifest?	Yes ☐ No ☐
If the shipment is waste, has the word "Waste" been included as part of the proper shipping description?	Yes ☐ No ☐
Does the material meet the definition of a hazardous substance?	Yes ☐ No ☐
If so, has the designation "RQ" been added?	Yes ☐ No ☐

Has the total quantity and container type been listed for each material?	Yes ☐ No ☐
Are any additional descriptions required for the particular material?	Yes ☐ No ☐
Has the EPA ID for the shipper, each transporter, and the designated facility been listed?	Yes ☐ No ☐
Have the names and addresses of the shipper and designated facility been listed?	Yes ☐ No ☐
Has the emergency response information been included?	Yes ☐ No ☐
Has the manifest been signed and dated by hand?	Yes ☐ No ☐
Has a copy of the manifest been maintained for recordkeeping?	Yes ☐ No ☐

Placarding

Have the proper placards been obtained and made available for the transporter?	Yes ☐ No ☐

Shipment Preparation

Has the shipment been properly identified, packaged, marked, and labeled?	Yes ☐ No ☐
Has the shipment been packaged such that it is not leaking?	Yes ☐ No ☐
Have the proper placards been affixed to the vehicle?	Yes ☐ No ☐
Do the number of containers match the number listed on the manifest?	Yes ☐ No ☐
Are potentially incompatible materials separated from each other?	Yes ☐ No ☐
Is the shipment properly secured, blocked, and braced?	Yes ☐ No ☐
Is the emergency response information readily available?	Yes ☐ No ☐

Spills/Incidents

If a spill of a material above its quantity has occurred, has the National Response Center been notified (see Chapter 7)?	Yes ☐ No ☐
Has a DOT incident report been filed?	Yes ☐ No ☐

5. STORAGE TANKS

If your cooperative conducts vehicle maintenance or refueling activities, chances are you have storage tanks. Common materials stored in tanks at cooperatives include petroleum products (such as gasoline, diesel, and used motor oil) and certain hazardous substances (such as antifreeze). As the owner, you are responsible for the safe operation and maintenance of your tanks. This chapter summarizes the Federal regulations and requirements for operating and maintaining storage tanks, both underground and aboveground, and provides information to assist you in complying with the regulations. Although the Federal storage tank regulations are often adopted by states, state and/or municipal requirements can be more stringent.

DEFINITION

A storage tank is a stationary device designed to contain an accumulation of substances, and constructed of nonearthen materials (i.e., concrete, steel, plastic) that provide structural support.

5.1 UNDERGROUND STORAGE TANKS

As defined in the Federal Regulations, an UST is "any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground." The federal UST regulations apply only to those tanks storing either petroleum products or certain hazardous substances. EPA estimates there are approximately 1 million USTs in the United States that contain such materials.

5.1.1 Why Are USTs Regulated?

Leaking USTs can cause environmental and safety hazards.

The reason for the regulation of USTs is that EPA estimates that many of the approximately 1 million USTs (including their piping) in the United States that contain petroleum products or hazardous substances are leaking. Leaking USTs can cause fires or explosions that threaten human safety. In addition, leaking USTs can contaminate soil or nearby groundwater. Because 50 percent of the U.S. population uses groundwater as a source of drinking water, the UST regulations were developed to minimize these risks and safeguard the nation's groundwater resources.

A release is any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST into groundwater, surface water, or

subsurface soil. Table 5-1 describes common causes of UST leaks and releases to the environment.

Table 5-1. Common Causes of Release from USTs

Cause of Leak	Description of Leak
Piping failures	Most leaks result from piping failure. Piping is smaller and less sturdy than tanks. It is assembled in the field with numerous connections and usually installed near the ground's surface. As a result, piping suffers much more than tanks from the effects of installation mistakes, excessive surface loads, and the stress of underground movement.
Corrosion	Buried bare metal can corrode and deteriorate. Many older USTs have bare metal tanks and piping that are not protected from corrosion.
Spills and overfills	Spills occur when a delivery truck's hose is disconnected incorrectly. Overfills occur when more petroleum is delivered into the tank than it can hold.
Installation errors	Tanks and piping also leak if they are not placed in the ground properly. For example, leaking can result if poorly selected or compacted backfill material is used when covering an UST, or if pipe fittings are inadequately attached to the UST.

EPA developed the UST regulations to make sure the following goals are reached:

- To prevent leaks and spills
- To find and correct problems created by leaks and spills
- To make sure that owners and operators of USTs can pay for correcting the problems created if their USTs leak.

5.1.2 What Are the Federal UST Regulations?

Federal UST regulations are found in Subtitle I of RCRA

In 1984, Congress amended the Resource Conservation and Recovery Act (RCRA) to require EPA to develop regulations to protect public health and the environment from leaking USTs. The amendment included a section, Subtitle I, that established a new and comprehensive regulatory program for UST systems containing petroleum products or substances defined as hazardous under Section 101.14 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. Federal Regulations for underground storage tank systems (USTs) are contained in 40 CFR Part 280.

Subtitle I of RCRA governs activities and requirements related to UST systems. It includes the following provisions for UST systems:

- Design, construction, installation, operating and notification requirements for new and existing systems.
- Release detection, reporting, investigation, confirmation, release response, and corrective action for systems containing petroleum or hazardous substances.
- System closure requirements.

USEFUL TIP

States generally have the same requirements as RCRA Subtitle I. However, some States (and municipalities) have more stringent UST regulations. You should contact your State UST office and your local municipality to determine if there are additional UST regulations you must comply with.

The regulations describe the steps you, as an UST owner or operator, need to take to help protect our health and environment. These steps will also help you avoid the high cost of cleaning up the environment and involving yourself in legal actions that can result if your tank or its piping leaks.

USEFUL TIP

Please note that you can easily obtain free booklets from EPA that provide clear but detailed descriptions of the UST requirements. A list of these booklets is provided in Section 5.1.3. EPA also makes these materials and much other UST information available at a Web site maintained by EPA's Office of Underground Storage Tanks at **http://www.epa.gov/OUST/**. This chapter summarize material found in EPA publications.

Exemptions to Federal UST regulations

The federal UST regulations do **not** apply to:

- Tanks with a capacity of 110 gallons or less
- Farm and residential tanks holding 1,100 gallons or less of motor fuel used for noncommercial purposes
- Tanks storing heating oil used on the premises where it is stored
- Tanks on or above the floor of underground areas
- Septic tanks and systems for collecting storm water and wastewater
- Flow-through process tanks

- Emergency spill and overfill tanks.

Additional categorical exemptions

USTs providing fuel to emergency generators are among those deferred by Federal regulations from leak detection requirements (see Section 5.1.4). In addition, large, field-constructed tanks (tanks assembled or constructed at the site as opposed to tanks manufactured in a factory) are deferred from both leak detection and upgrade requirements (see Section 5.1.4).

5.1.3 How Do I Comply with the Federal UST Regulations?

Federal regulations require that all regulated UST systems should be designed and constructed to retain their structural integrity throughout their operating life, and all USTs and attached piping should be protected from corrosion. In addition, all systems must be equipped with proper devices to prevent overfills and to control or contain spills. Release detection methods must be implemented to meet the performance criteria specified in the UST regulations.

Regulations contain require-ments for new, existing and all UST systems.

To meet the requirements of RCRA Subtitle I, EPA has requirements that apply to all UST systems, to existing UST systems, and to new UST systems. "Existing" UST systems are those that were installed before December 22, 1988; "new" systems are those installed after that date. The requirements or compliance deadlines can differ for new and existing USTs in respect to leak detection and spill, overfill, and corrosion protection, as discussed in the following pages.

Requirements Applicable to All UST Systems

Your responsibilities

In general, for all USTs at your cooperative, you are responsible for assuring that there are no leaks or spills from your USTs, including assuring that USTs maintain their integrity and are protected from spills, overfills, and corrosion. To meet these goals, your cooperative should regularly review areas around the tanks to observe any signs of tank spills, overflows, and leaks.

Requirements

In addition, your cooperative is required to submit appropriate notification information to EPA or your State or local implementing agency, and maintain all records including permits, registrations, and installation or closure records at your cooperative. Requirements for notification, recordkeeping, leak detection, and spill, overfill, and corrosion protection are described below.

Notification

You must report to the regulatory authority on the following occasions:

- When you install an UST, you have to fill out a **notification form** available from your state. This form provides information about your UST, including a certification of correct installation. (You should have already used this form to identify your existing USTs. If you haven't done that yet, be sure you do so now.)

- You must report suspected releases to the regulatory authority. If a release is confirmed, you must also report follow-up actions you plan or have taken to correct the damage caused by your UST.

- You must notify the regulatory authority 30 days before you permanently close your UST.

You should check with your regulatory authority about the particular reporting requirements in your area, including any additional or more stringent requirements than those noted above.

Recordkeeping

You will have to keep records that can be provided to an inspector during an on-site visit that prove your facility meets certain requirements. These records must be kept long enough to show your facility's recent compliance status in four major areas:

- You will have to keep records of **leak detection** performance and maintenance:

  - ✔ The last year's monitoring results, and the most recent tightness test.

  - ✔ Copies of performance claims provided by leak detection manufacturers.

  - ✔ Records of recent maintenance, repair, and calibration of on-site leak detection equipment.

- You will have to keep records showing the required inspections and tests of your **corrosion protection** system.
- You must keep records showing that a **repaired or upgraded UST system** was properly repaired or upgraded.

- For at least 3 years after **closing an UST**, you must keep records of the site assessment results required for permanent closure. (These results show what impact your UST has had on the surrounding area.)

- You must keep records that document your financial responsibility (as explained in EPA's booklet, **Dollars And Sense**, see 5.3.1).

You should check with your regulatory authority about the particular recordkeeping requirements in your area. Generally, you should follow this useful rule of thumb for recordkeeping: When in doubt, keep it.

Leak Detection Methods

Federal UST regulations require that owners and operators of all UST systems provide a method, or combination of methods, of release detection that:

- Can detect a release from any portion of the UST and the connected piping that routinely contains stored product;

- Is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions; and

- Meets the specific performance requirements for each release detection method.

Your cooperative must check its USTs at least once a month to see if they are leaking. You have several options for performing monthly monitoring of the UST using one (or a combination) of the following **monthly monitoring leak detection methods**:

- ***Automatic tank gauging***—This method uses automated processes to monitor product level and inventory control in the tank (not applicable to piping).

- ***Vapor monitoring***—This method samples vapors in the soil gas surrounding the UST. Leaked petroleum produces vapors that can be detected in the soil gas. The regulations describe several requirements for using this leak detection method. For example, this method requires using porous soils in the backfill and locating the monitoring devices in these porous soils near the UST system.

- ***Interstitial monitoring***—This method detects leaks in the space between the UST and a second barrier or wall. The regulations describe several general performance requirements for the application of interstitial monitoring with double-walled USTs, USTs fitted with internal liners, and USTs using partial interception barriers located below the UST.

- ***Groundwater monitoring***—This method monitors the groundwater table near an UST for the presence of released free product on the water table. Monitoring wells near the UST are checked frequently to see if petroleum can be detected. The regulations allow manual and automatic methods for detecting petroleum in the monitoring wells. The regulations also describe several requirements for the use of this method. For example, this method cannot be used if the water table is more than 20 feet below the surface of the ground.

- ***Statistical inventory reconciliation***—In this method, a trained professional uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data, which you must supply regularly.

- If **other methods** can be shown to work as effectively as the methods described above for leak detection, then these alternative methods can be approved by the regulatory authority.

Short-term Alterative Leak Detection Methods

There is an alternate leak detection method that can be used for **a maximum of 10 years after you install a new UST**. Instead of using one of the monthly monitoring methods noted above, you can combine inventory control (reconciled monthly) with tank tightness testing. Inventory control involves taking daily measurements of tank contents and recording deliveries and amount pumped. Based upon some daily and monthly calculations, you can discover if your tank may be leaking. Tank tightness testing usually requires taking the UST out of service while changes in level or volume over time are measured. Your UST will need a tank tightness test every 5 years. **After 10 years, you must use one of the monthly monitoring methods discussed above.** This alternative leak detection method can also be used for existing USTs for 10 years following the date the tank has corrosion protection installed, or until December 1998, whichever is later.

For existing USTs that lack corrosion protection (see discussion below), there is the option of using monthly inventory control combined with **annual** tank tightness testing, but this option can be used only until December 1998.

For small USTs, (tanks of 2,000 gallons capacity or less) **manual tank gauging** may be an option as a leak detection method, either by itself or in combination with tank tightness testing. The manual tank gauging method involves keeping the tank undisturbed for at least 36 hours each week, during which the tank's contents are measured, twice at the beginning and twice at the end of the test period. Manual tank gauging can be used as the sole method of leak detection for the life of the tank ***only*** for tanks up to 1,000 gallons. For tanks between 1,001 and 2,000 gallons, this method can be used only in combination with periodic tank tightness testing. This combined method, however, can be used only during the first 10 years following new tank installation. This method also can be used for existing USTs for 10 years following the date the tank has corrosion protection, or December 1998, whichever is later.

Additional Leak Detection for Piping

If you UST has **pressurized piping**, it must meet the following requirements:

- The piping must have devices that automatically shut off or restrict flow or have an alarm that indicates a leak.

- You must either conduct an **annual** tightness test of the piping or use one of the following monthly methods noted above for tanks: interstitial monitoring, vapor monitoring, groundwater monitoring, statistical inventory reconciliation, or other approved monthly methods.

If your UST has **suction piping**, your leak detection requirements will depend on which type of suction piping you have. One type of suction piping does **not** require leak detection if it has the following characteristics:

- Below-grade piping operating at less than atmospheric pressure is sloped so that the piping's contents will drain back into the storage tank if the suction is released.

- Only one check valve is included in each suction line and is located directly below the suction pump.

Suction piping that does **not** exactly match the characteristics noted above must have leak detection, either monthly monitoring (using one of the monthly methods noted above for use on pressurized piping) or tightness testing of the piping every 3 years.

Corrosion Protection

Metal USTs and piping must have corrosion protection

Corrosion is the dissolution or gradual wearing away of a material, especially by chemical action. Metal is especially susceptible to corrosion. If your UST or piping is made of metal or has metal components, you must have some form of corrosion protection for them.

DEFINITION – CORROSION

Corrosion results when bare metal, soil, and moisture conditions combine to produce an underground electric current that destroys metal. Corrosion creates holes and leaks develop.

Corrosion protection includes, but is not limited to, the following:

- Constructing the tank and piping of non-corrodible material, such as fiberglass,
- Enclosing or coating the tank and piping with non-corrodable material, and
- Cathodic protection. There are two cathodic protection methods:
  - ✔ ***Sacrificial Anode System***—Sacrificial anodes can be attached to the UST for corrosion protection. Sacrificial anodes are pieces of metal more electrically active than the steel UST. Because these anodes are more active, the corrosive current will exit from them rather than the UST. Thus, the UST is protected while the attached anode is "sacrificed."
  - ✔ ***Impressed Current System***—An impressed current system uses a rectifier to convert alternating current to direct current. This current is sent through an insulated wire to the anodes, which are special metal bars buried in the soil near the UST. The current then flows through the soil to the UST system, and returns to the rectifier through an insulated wire attached to the UST. The UST system is protected because the

current going to the UST system overcomes the corrosion-causing current normally flowing away from it.

The types of corrosion protection options available, and required for your system are discussed below. All corrosion protection systems must be operated and maintained to provide continuous corrosion protection to the metal components of the portion of the UST and piping that are in contact with the ground and routinely contain petroleum products or hazardous substances.

Corrosion Protection for Existing USTs

If your existing UST does not have corrosion protection, you must add it. For existing steel tanks lacking corrosion protection, it is not practical to add coatings or claddings. Instead, to add corrosion protection to existing steel tanks, you must either add cathodic protection (see below) to your tank, install an internal lining, or both. For each approach, there are procedures you should follow to ensure the adequacy of the corrosion protection you install.

If you are adding **only cathodic protection**, you must assess the integrity of your tank to make sure it is structurally sound. **If the UST is not sound, discontinue using the tank, and follow instructions in Sections 5.1.4 and 5.1.5 for closing the tank and corrective action.** The following are methods you can use to assess the structural integrity of your tank, depending on the age of the tank:

- If the tank is **less than 10 years old**, you can use results from one of the monthly leak detection methods to show the UST is not leaking (interstitial monitoring, automatic tank gauging, vapor monitoring, groundwater monitoring, statistical inventory reconciliation, or other approved methods).

- If the tank is **less than 10 years old**, you can use results from two tank tightness tests to show the UST is not leaking. The first test takes place before you install cathodic protection, and the second test takes place between 3 and 6 months after installation.

- If the tank is **10 years old or more**, it can be internally inspected, tested, and assessed to make sure that the tank is structurally sound and free of corrosion holes (see 5.3.2 for industry codes).

- You can assess the tank for corrosion holes by a method that the regulatory authority determines is no less protective than those above.

Cathodic protection systems must be designed and tested by qualified experts.

After determining your tank is structurally sound, you can install cathodic protection. Regulations require a qualified corrosion expert to design cathodic protection systems installed at the UST site. The system must be tested by a qualified cathodic protection tester within 6 months of installation and at least every 3 years thereafter. You will need to keep the results of the last two tests to prove that the cathodic protection is working. In addition, you must inspect an impressed current system every 60 days to verify that the system is operating. Keep results of your last three inspections to prove that the impressed current system is operating properly.

If you are **adding only an interior lining** to the tank, the interior can be lined with a thick layer of non-corrodible material (see Section 5.3.2 for industry codes). Tanks using ***only*** an interior lining for corrosion protection must pass an internal reinspection in 10 years and every 5 years after that to make sure that the lining is sound. Keep records of the inspection results.

If you **add both cathodic protection and an interior lining**, the advantages for you of this combined method are simple: your USTs receive more protection; and you are not required to have the interior lining periodically inspected (which saves you the cost of these inspections). You will still need to have the cathodic protection system periodically tested and inspected and to keep records (as explained above).

Existing steel piping must have cathodic protection. Note that cathodic protection needs to be designed by a qualified corrosion expert, tested and inspected periodically, and records kept (as explained above). Piping entirely made of (or enclosed in) non-corrodible material, such as fiberglass, does not need cathodic protection.

Corrosion Protection for New USTs

Your new USTs must match one of the following performance standards for corrosion protection:

- ***Tank and piping completely made of non-corrodible material, such as fiberglass***—Corrosion protection is also provided if tank

and piping are completely isolated from contact with the surrounding soil by being enclosed in or "jacketed" in non-corrodible material.

- ***Tank and piping made of steel having a corrosion-resistant coating AND having cathodic protection (such as an sti-P$_3$® tank with appropriate piping)***—A corrosion-resistant coating electrically isolates the coated metal from the surrounding environment to help protect against corrosion. ***Asphaltic coating does NOT qualify as a corrosion-resistant coating.*** Methods of cathodic protection are briefly explained above.

- ***Tank made of steel clad with a thick layer of non-corrodible material (such as an ACT-100® tank)***—This option does not apply to piping. ***Galvanized steel is NOT a non-corrodible material.***

New tank cathodic protection inspection require-ments

New UST systems equipped with cathodic protection must be inspected for proper operation by a qualified cathodic protection inspector. The inspection must be conducted within 6 months of installation and at least every 3 years thereafter. The inspection criteria should be in accordance with the standards established by a nationally recognized association, such as the National Association of Corrosion Engineers. Records of the inspection should be maintained for at least the last two sets of inspection results. A qualified corrosion expert must design cathodic protection systems, such as impressed current systems, that are installed at the UST site. Impressed current systems must be inspected every 60 days to ensure proper equipment operation.

Spill and Overfill Protection

How spills and overfills can occur

Many releases at UST sites come from spills and/or from overfilling the tank. Human error causes most spills and overfills. Spills often occur at the fill pipe when the delivery truck's hose is disconnected. Although these spills are usually small, repeated small releases can cause big environmental problems. Overfills usually occur when a tank is overfilled and the excess is released at the fill pipe, through loose fittings on the top of the tank, and/or through a loose vent pipe. The tightness of these fittings normally would not be a problem if the tank were not filled beyond its capacity. Overfills usually release much larger volumes than spills.

To prevent spills and overfills, the regulations specify spill and overfill protection requirements for all tanks. These requirements include the following:

- **All USTs must have catchment basins** to contain spills. These are described below. New USTs must have catchment basins when they are installed; existing USTs must have catchment basins installed by December 22, 1998.

- **All USTs must have overfill protection.** The three main types of overfill protection devices (automatic shutoff devices, overfill alarms, and ball float valves) are described below. New USTs must have overfill protection devices when they are installed.

- You and your fuel deliverer must **follow industry standards for correct filling practices.** For example, you must make sure there is room in the UST for the delivery, and the delivery driver must watch the delivery at all times. If you and the delivery driver follow standard practices, nearly all spills and overfills can be prevented.

Exemption for overfill protection

All UST systems must be equipped with overfill protection, unless the UST never receives more than 25 gallons at a time. Many small used oil tanks fall in this category. However, if your UST receives more than 25 gallons at a time, you must comply with the overfill requirements in the regulations.

What are Catchment Basins?

Catchment basins are also called “spill containment manholes” or “spill buckets.” Basically, a catchment basin is a bucket sealed around the fill pipe). To protect against spills, the basin should be large enough to contain what may spill when the delivery hose is uncoupled from the fill pipe. Basins range in size from those capable of holding only a few gallons to those that are much larger--the larger the catchment basin, the more spill protection it provides. You need a way to remove liquid from catchment basins. Manufacturers equip catchment basins with either pumps or drains to remove liquid.

You should try to keep water out of catchment basins. Some catchment basins can collect enough water and sediment, along with spilled product, to make draining this mixture into the tank unwise. If this happens, you may pump out the catchment basin and dispose of the liquid properly. If the liquid contains fuel or chemicals, it could be considered a hazardous waste (see Chapter 3). Contact your state agency responsible for hazardous waste for information on testing and handling requirements and review the information in Chapter 3 on managing hazardous wastes.

What are Overfill Protection Devices?

Overfill protection devices include automatic shutoff devices, overfill alarms, and ball float valves. If you have "pumped delivery" where fuel is delivered under pressure, you must make sure your overfill protection device works compatibly with pumped deliveries. Also, remember that overfill protection devices are effective only when combined with careful filling practices.

Automatic shutoff devices are installed in an UST's fill pipe. These devices can slow down and then stop the delivery when the product has reached a certain level in the tank. This device—sometimes simply called a "fill pipe device"—has one or two valves that are operated by a float mechanism. Some automatic shutoff devices work in two stages. The first stage drastically reduces the flow of product to alert the driver that the tank is nearly full. The driver can then close the delivery valve and still have room in the tank for the product left in the delivery hose. If the driver does not pay attention and the liquid level rises higher, the valve closes completely and no more liquid can be delivered into the tank, leaving the driver with a delivery hose full of product.

Overfill alarms use probes installed in the tank to activate an alarm when the tank is either 90 percent full or within 1 minute of being overfilled. Either way, the alarm should provide enough time for the driver to close the truck's shutoff valve before an overfill happens. Alarms must be located where the driver can see or hear them easily. (Overfill alarms are often a part of automatic tank gauging systems.) Overfill alarms work only if they alert the driver at the right time and the driver responds quickly. Remember to put the alarm on an electrical circuit that is active all the time so that the alarm will always work. Many deliveries are made at night when the facility is closed. You don't want to turn off your alarm when you turn off the office lights.

Ball float valves are placed at the bottom of the vent line several inches below the top of the UST. The ball floats on the product and rises with product level during delivery until it restricts vapor flowing out the vent line BEFORE the tank is full. If all tank fittings are tight, the ball float valve can create enough back pressure to restrict product flow into the tank—which can notify the driver

USEFUL TIP

Manufacturers do not recommend using ball float valves with suction piping, pressurized delivery, or coaxial Stage I vapor recovery.

to close the truck's shutoff valve. However, if the UST has loose fittings, sufficient back pressure may not develop and will result in an overfill.

Requirements for Existing USTs

All existing UST systems must meet the requirements for all tanks discussed above, as well as the minimum performance standards provided in Table 5-2. Note the compliance deadlines in 1993 for leak detection and 1998 for spill, overfill, and corrosion protection indicated in the table. If you have not already done so, do an inventory of your USTs to determine whether they comply with these minimum performance standards, and whether any or all have been upgraded or replaced to bring them into compliance. If your USTs are not in compliance with the minimum performance standards for existing USTs by the required deadlines, you can be cited for violations and fined.

Note that your existing **USTs must be in compliance now** with leak detection requirements and must be in compliance with spill, overfill, and corrosion protection requirements by December 22, 1998. Additional options available to you are to close the existing UST or replace the existing UST with a new UST that meets the performance standards for new USTs.

Requirements for New USTs

All new USTs must be properly designed and constructed according to a code of practice developed by a nationally recognized association or independent testing laboratory (See Section 5.3). For new UST systems, performance standards for leak detection, corrosion protection, and spill/overfill prevention should be incorporated into the design and construction of the system. At the time of installation, new UST systems must comply with requirements for leak detection and spill, overfill, and corrosion protection listed in Table 5-3. If your new USTs are not in compliance with the minimum performance standards when installed, you can be cited for violations and fined.

Table 5-2. Performance Standards for Existing UST Systems

LEAK DETECTION: Last Compliance Deadline Was December 1993

EXISTING TANKS	Monthly Monitoring*; or Monthly Inventory Control and Annual Tank Tightness Testing *(This choice can only be used until December 1998.)*; or Monthly Inventory Control and Tank Tightness Testing Every 5 Years *(This choice can only be used for 10 years after tank has been protected from corrosion, or until December 1998, whichever is later).*	
EXISTING PRESSURIZED PIPING *Choice of one from each set*	Automatic Flow Restrictor; or Automatic Shutoff Device; or Continuous Alarm System	Annual Line Testing; or Monthly Monitoring* *(except automatic tank gauging)*
EXISTING SUCTION PIPING	Monthly Monitoring* *(except automatic tank gauging); or* Line Testing Every 3 Years; or No Requirements**	
CORROSION PROTECTION: Compliance Deadline Is December 22, 1998		
EXISTING TANKS	Same Options as for New Tanks; or Add Cathodic Protection System; or Interior Lining; or Interior Lining and Cathodic Protection	
EXISTING PIPING	Same Options as for New Piping; or Cathodically Protected Steel	
SPILL/OVERFILL PROTECTION: Compliance Deadline Is December 22, 1998		
EXISTING TANKS	Catchment Basins; and Automatic Shutoff Devices or Overfill Alarms or Ball Float Valves	

* Monthly Monitoring includes: Automatic Tank Gauging, Ground Water Monitoring, Vapor Monitoring, Statistical Inventory Reconciliation, Interstitial Monitoring, and other approved methods.
**Types of suction piping that do not require leak detection include: below-grade piping that is sloped so that the piping's contents will drain back into the storage tank if the suction is released and suction lines that have only one check valve that is located directly below the suction pump.

Table 5-3. Performance Standards for New UST Systems

LEAK DETECTION		
NEW TANKS	Monthly Monitoring*, *or* Monthly Inventory Control and Tank Tightness Testing Every 5 Years *(acceptable only for 10 years after installation)*	
NEW PRESSURIZED PIPING *Choice of one from each set*	Automatic Flow Restrictor, *or* Automatic Shutoff Device, *or* Continuous Alarm System	Annual Line Testing, *or* Monthly Monitoring* *(except automatic tank gauging)*
NEW SUCTION PIPING	Monthly Monitoring* *(except automatic tank gauging)*, *or* Line Testing Every 3 Years, *or* No Requirements**	
CORROSION PROTECTION		
NEW TANKS	Coated and Cathodically Protected Steel; or Fiberglass; or Steel Tank clad with Fiberglass	
NEW PIPING	Coated and Cathodically Protected Steel; or Fiberglass	
SPILL/OVERFILL PROTECTION		
NEW TANKS	Catchment Basins; and Automatic Shutoff Devices or Overfill Alarms or Ball Float Valves	

* Monthly Monitoring includes: Automatic Tank Gauging, Ground Water Monitoring, Vapor Monitoring, Statistical Inventory Reconciliation, Interstitial Monitoring, and other approved methods.
**Types of suction piping that so not require leak detection include: below-grade piping that is sloped so that the piping's contents will drain back into the storage tank if the suction is released and suction lines that have only one check valve that is located directly below the suction pump.

Owners and operators must certify that proper installation standards were followed and must identify the methods and procedures used to install the system. See Section 5.3 for organizations to contact for proper installation standards.

Proper installation is crucial to ensure the structural integrity of any new tank system. Installation of an UST system should be conducted in accordance with standards established by several professional and scientific organizations, such as the National Fire Prevention Association, the American Petroleum Institute, and the Steel Tank Institute. UST system owners must be able to certify that the tank system was installed according to the standards of one of these organizations. See Section 5.3 for contacting these organizations.

5.1.4 Closure Requirements for New and Existing UST Systems

You can close your UST **temporarily** or **permanently.**

Closing Temporarily

You may temporarily close your UST for up to 12 months by following these requirements for **temporary closure**:

- Continue to monitor for leaks by maintaining the UST's leak detection. (If your UST is *empty*, you do not need to maintain leak detection.) Also, continue to monitor and maintain any corrosion protection systems. If a release is discovered, quickly stop the release, notify your regulatory authority, and take appropriate action to clean up the site.

- If the UST remains temporarily closed for more than 3 months, leave vent lines open, but cap and secure all other lines, pumps, manways, and ancillary equipment.

After 12 months of **temporary** closure, you have three options:

- **Permanently close your UST** if it doesn't meet the applicable requirements for new or upgraded USTs (except for spill and overfill).

WARNING
People are killed or injured every year while closing or removing tanks. Use safe removal practices (see 5.3.2 for a safe closure standard). Only trained professionals should close or remove USTs.

- **Ask your regulatory authority for an extension** beyond 12 months, if you provide an assessment that determines whether contamination is present at your site.

- **Keep the UST temporarily closed** without needing an extension granted by the regulatory authority if the UST meets the applicable requirements for new or upgraded USTs (except for spill and overfill) and the requirements noted above for temporary closure.

Closing Permanently

If you decide to close your UST permanently, follow these requirements for **permanent closure**:

- Notify the regulatory authority at least 30 days before you close your UST.

- Determine if contamination from your UST is present in the surrounding environment. If there is contamination, you may have to take corrective action. For at least 3 years, keep a record of the actions you take to determine if contamination is present at the site (or you can mail this record to your regulatory authority).

- Either remove the UST from the ground or leave it in the ground. In both cases, the tank must be emptied and cleaned by removing all liquids, dangerous vapor levels, and accumulated sludge. These potentially very hazardous actions need to be carried out carefully by trained professionals who follow standard safety practices. If you leave the UST in the ground, have it filled with a harmless, chemically inactive solid, like sand.

5.1.5 Corrective Action/Site Remediation

Pay attention to warning signs that your tank is leaking.

There are warning signals that indicate your UST may be leaking and creating problems for the environment and your business. By paying careful attention to the early warning signals and reacting to them quickly before major problems develop, you can minimize potential environmental and liability problems.

You should suspect a leak when you discover the following warning signals:

- **Unusual operating conditions** (such as erratic behavior of the dispensing pump). Check first to see if this problem results from equipment failure that can be repaired.

- **Results from leak detection monitoring and testing that indicate a leak.** What at first appears to be a leak may be the result of faulty equipment that is part of your UST system or its leak detection. Double check this equipment carefully for failures.

If you suspect leaks based on the occurrence of these early warning signals, you need to **call your regulatory authority**. Then, you must find

out quickly if these ***suspected leaks*** are ***actual leaks*** using the following investigative steps:

- Conduct tightness testing of the entire UST system.
- Check the site for additional information on the presence and source of contamination.

If these system tests and site checks confirm a leaking UST, follow the actions for responding to **confirmed** leaks described below.

Respond to evidence of leaked petroleum at or near your cooperative.

If you store petroleum products in USTs, you must also respond quickly to any evidence of leaked petroleum that appears at or near your cooperative. For example, neighbors might tell you they smell petroleum vapors in their basements or taste petroleum in their drinking water. If evidence of this type is discovered, **you must report this discovery immediately** to the regulatory authority and take the investigative steps and follow-up actions noted above.

Responding to Confirmed Leaks

Your response to **confirmed** releases comes in two stages: **short-term** and **long-term actions**.

Short-term Actions

- Take immediate action to stop and contain the release.
- Report the release to the regulatory authority within 24 hours. However, petroleum spills and overfills of less than 25 gallons do not have to be reported if you immediately contain and clean up these releases.
- Make sure the release poses no immediate hazard to human health and safety by removing explosive vapors and fire hazards. Your fire department should be able to help or advise you with this task. You must also make sure you handle contaminated soil properly so that it poses no hazard (for example, from vapors or direct contact).
- Remove petroleum from the UST system to prevent further release into the environment.

- Find out how far the petroleum has moved and begin to recover the leaked petroleum (such as product floating on the water table). Report your progress and any information you have collected to the regulatory authority no later than 20 days after confirming a release.

- Investigate to determine if the release has damaged or might damage the environment. This investigation must determine the extent of contamination both in soils and groundwater. You must report to the regulatory authority what you have learned from an investigation of your site according to the schedule established by the regulatory authority. At the same time, you must also submit a report explaining how you plan to clean up the site. Additional site studies may be required.

Long-term Actions

Based on the information you have provided, the regulatory authority will decide if you must take further action at your site. You may need to take two more actions:

- Develop and submit a Corrective Action Plan that shows how you will meet requirements established for your site by the regulatory authority.

- Make sure you implement the steps approved by the regulatory authority for your site.

Can Leaking Tanks Be Repaired?

You can repair a leaking tank if the person who does the repair carefully follows standard industry codes that establish the correct way to conduct repairs. (See 5.3.2 for industry codes and standards.)

Within 30 days of the repair, you must prove that the tank repair has worked by doing one of the following:

- Have the tank inspected internally or tightness tested following standard industry codes; or

- Use one of the monthly leak detection monitoring methods; or

- Use other methods approved by the regulatory authority.

Within 6 months of repair, USTs with cathodic protection must be tested to show that the cathodic protection is working properly. You must keep records for each repair as long as you keep the UST in service.

Can Leaking Piping Be Repaired?

Damaged **metal** piping **cannot** be repaired and must be replaced. Loose fittings can be tightened, and in some cases that may solve the problem. Piping made of fiberglass-reinforced plastic can be repaired, but **only** in accordance with the manufacturer's instructions or national codes of practice. Within 30 days of the repair, piping must be tested in the same ways noted above for testing tank repairs (except for internal inspection).

5.1.6 State Regulations

RCRA, Subtitle I establishes requirements that states must meet to have a Federally approved UST program. Presently, 24 states have EPA-approved UST programs. In many cases, the state regulations in their final form are extensions of the Federal UST program and the requirements of each state must be at least as stringent as the corresponding Federal regulations. Under the Subtitle I requirements, states with approved UST programs have primary enforcement responsibility with respect to UST program requirements in their states. It is important to be aware of state and local requirements for UST systems. All state and territory UST program offices can be found on EPA's Web site at **http://www.epa.gov/swerust1/states/statcon1.htm**.

5.2 ABOVEGROUND STORAGE TANKS

By definition, an aboveground storage tank (AST) system must have more than 90 percent of the tank and its associated piping aboveground. The Clean Water Act (CWA) contains the requirements for ASTs, and many requirements for UST systems are applicable to AST systems (i.e., spill/overfill protection, leak detection). In addition, there are other requirements for AST systems mandated by the Spill Prevention Control and Countermeasure (SPCC) rule, as well as by fire codes that should be incorporated into the system.

Integrity testing for your AST

As outlined by CWA, AST systems should be subject to periodic integrity testing. The testing method used should take into account tank design features such as a floating roof, and should use such techniques as hydrostatic testing, visual inspection or a system of non-destructive shell thickness testing. Tank supports and foundations should be included in

these inspections. In addition, periodic pressure testing may be warranted for piping in areas where facility drainage is such that equipment failure may lead to a spill event. Testing records should be kept where appropriate, and used for comparison.

Visually inspect the outside of your AST frequently.

In addition to integrity testing, the outside of the tank should frequently be observed by operating personnel for signs of deterioration, leaks which might cause a spill, or accumulation of oil inside diked areas. All aboveground valves and pipelines should be subjected to regular inspections by operating personnel. These inspections should be conducted to note the general condition of the tank equipment, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.

Containment for spills from ASTs

ASTs and their piping should be equipped with appropriate containment and/or diversionary structures or equipment to prevent discharged oil from reaching a navigable water course. This is usually accomplished by constructing special containment areas and drainage lines (equipped with oil/water separators) not only at the tank location, but in the vicinity of the tank itself. One of the following preventive systems or its equivalent should be used as a minimum:

- For onshore facilities:
  - ✔ Dikes, berms or retaining walls sufficiently impervious to contain spilled oil
  - ✔ Curbing
  - ✔ Culverting, gutters or other drainage systems
  - ✔ Weirs, booms or other barriers
  - ✔ Spill diversion ponds
  - ✔ Retention ponds
  - ✔ Absorbent materials

- For offshore facilities:
  - ✔ Curbing or drip pans
  - ✔ Sumps and collection systems.

AST systems that are **exempt** from CWA regulations include:

- Onshore and offshore facilities which, due to their location, could not be reasonably expected to discharge oil into or upon the navigable waters of the U.S. or adjoining shorelines

- Equipment or operations of vessels or transportation related to onshore and offshore facilities which are subject to the authority of the U.S. Department of Transportation (DOT)

- Both of the following criteria are met:

  ✔ The underground buried storage capacity of the facility is 42,000 gallons or less of oil

  ✔ The storage capacity which is not buried at the facility is 1,320 gallons of oil or less and no single container exceeds a capacity of 660 gallons.

5.3 RESOURCES

5.3.1 References

For information on USTs, you can go to EPA's Office of Underground Storage Tanks Web site at **http://www.epa.gov/OUST/** to download, order, or read documents online. You can call EPA's **toll-free** RCRA/ Superfund Hotline at 800 424-9346 and order ***up to 30 free copies***. Or you can write and ask for titles by addressing your request to NCEPI, our publication distributor: NCEPI, Box 42419, Cincinnati, OH 45242. Or you can make your request by calling NCEPI's toll-free number at 800 490-9198. Or you can fax your order to NCEPI at 513 891-6685. If you want ***more than 30 copies***, contact Jay Evans at 703 603-7149.

Publications About USTs

Musts For USTs: A Summary Of Federal Regulations For USTs. Booklet clearly summarizes federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and recordkeeping. Updated & revised 1995. **Normas y Procedimientos para T.S.A.** Spanish translation of 1988 edition of **Musts For USTs**.

Straight Talk On Tanks: Leak Detection Methods For Petroleum USTs. Booklet explains federal requirements for leak detection and describes allowable leak detection methods. Updated & revised 1995.

Doing Inventory Control Right: For USTs. Booklet describes how owners/operators of USTs can use inventory control and periodic tightness testing to meet federal leak detection requirements. Contains reporting forms.

Manual Tank Gauging: For Small USTs. Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains reporting forms .

Introduction To Statistical Inventory Reconciliation: For USTs. Booklet describes the use of Statistical Inventory Reconciliation (SIR) to meet federal leak detection requirements .

Don't Wait Until 1998: Spill, Overfill, And Corrosion Protection For USTs. Information to help owners and operators of USTs meet the 1998 deadline for compliance with requirements to upgrade, replace, or close USTs installed before December 1988. Materials available as a 16-page booklet, a tri-fold leaflet, or Spanish translation of the booklet (*No Espere Hasta El 1998!*).

Dollars And Sense: Financial Responsibility Requirements For USTs. Booklet clearly summarizes the "financial responsibility" required of UST owners/operators by federal UST regulations.

An Overview Of UST Remediation Options. Information about technologies that can be used to remediate petroleum contamination in soil and groundwater.

Controlling UST Cleanup Costs. Fact sheet series on the cleanup process includes: *Hiring a Contractor, Negotiating the Contract, Interpreting the Bill, Managing the Process, and Understanding Contractor Code Words*.

Pay-For-Performance Cleanups: Effectively Managing UST Cleanups. Booklet explores potential advantages of using pay-for-performance cleanup agreements to reduce the cost and time of cleanups and more effectively manage cleanup resources.

5.3.2 For Further Information

Industry Codes and Standards

Installation

API Recommended Practice 1615 (1987), *Installation of Underground Petroleum Storage Systems*

PEI RP100-94 (1994), *Recommended Practices for Installation of Underground Liquid Storage Systems*

Tank Filling Practices

NFPA 385 (1985), *Standard for Tank Vehicles for Flammable and Combustible Liquids*

Closure

API Recommended Practice 1604 (1996), *Closure of Underground Petroleum Storage Tanks*

Assessing Tank Integrity, Repairing Tanks, and Interior Lining of Tank

API Recommended Practice 1631 (1992), *Interior Lining of Underground Storage Tanks*

NLPA Standard 631 (1991), *Entry, Cleaning, Interior Inspection, Repair, and Lining of Underground Storage Tanks*

Corrosion Protection

API Recommended Practice 1632 (1987), *Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*

NACE RP-0169-92 (1992), *Standard Recommended Practice: Control of Corrosion on Underground or Submerged Metallic Piping Systems*

NACE RP-0285-85 (1985), *Standard Recommended Practice: Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems*

STI R892-91 (1991), *Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems*

General (Repair, Spill and Overfill, Installation, Compatibility)

API Recommended Practice 1621 (1993), *Bulk Liquid Stock Control at Retail Outlets*

API Recommended Practice 1626 (1985), *Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations*

API Recommended Practice 1627 (1986), *Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations*

API Recommended Practice 1635 (1987), *Management of Underground Petroleum Storage Systems at Marketing and Distribution Facilities*

NFPA 30 (1993), *Flammable and Combustible Liquids Code*

NFPA 30A (1993), *Automotive and Marine Service Station Code*

Organizations

API – American Petroleum Institute
1220 L Street, NW
Washington, DC 20005
(202) 682-8000

Fiberglass Petroleum Tank and Pipe Institute
9801 Westheimer, Suite 606
Houston, TX 77042-3951
(713) 465-3310

NACE International (formerly the National Association of Corrosion Engineers)
Box 218340
Houston, TX 77218-8340
(713) 492-0535

NFPA – National Fire Protection Association
1 Batterymarch Park
P.O. Box 9101
Quincy, MA 02269-9101
(617) 770-3000

NLPA – National Leak Prevention Association
P.O. Box 1643
Boise, ID 83701
(208) 336-6941

PEI – Petroleum Equipment Institute
P.O. Box 2380
Tulsa, OK 74101-2380
(918) 494-9696

Steel Tank Institute

570 Oakwood Road
Lake Zurich, IL 60047
(708) 438-TANK [8265]

6. HOW DO I SAFELY MANAGE HAZARDOUS PRODUCTS USED AT MY COOPERATIVE?

You may be handling and storing a variety of **products (i.e., a substance that has not been used, and is not a waste)** such as oils, paints, paint thinners/solvents, antifreeze, pesticides, and/or fuels that you use in your daily operations. Many of these products are defined in EPA regulations as "hazardous substances" (see box). There are regulations for storage of some types of hazardous products, and for reporting your use of them (including storage for future use). There also are standard practices for storage and handling to prevent exposure of individuals to them, to prevent releases to the environment, and to prevent them from mixing together (which could cause explosions, fire, or chemical reactions that release other toxic or hazardous substances).

DEFINITION

Hazardous substances are defined in the CERCLA/EPCRA regulations (at 40 CFR 302.4). The regulations include a list of all defined hazardous substances. Included in the CERCLA/EPCRA definition of hazardous substances are RCRA listed or hazardous wastes, as well as PCBs and PCB wastes. PCBs and PCB wastes and how to manage them are discussed in Chapter 2; RCRA hazardous waste types and discussion of the regulations for managing them are included in Chapter 3.

This chapter will provide you with information on the reporting and storage requirements in the regulations if you use any products defined as hazardous substances at your cooperative, and best management practices for storage and handling of these products.

DO THE REGULATIONS APPLY TO ME?

The material safety data sheets for the products you use, will indicate if the product is a hazardous substance. Also, you can look the product up in the list in 40 CFR 302.4.

6.1 WHAT ARE THE REGULATIONS FOR STORAGE AND REPORTING USE OF HAZARDOUS PRODUCTS?

The Emergency Planning and Community Right to Know Act (EPCRA) addresses protection of the community through establishment of emergency response agencies such as the Local Emergency Planning Committee (LEPC) and the State Emergency Response Commission (SERC). These emergency response agencies coordinate spill response in the event of an accident or emergency. To provide these agencies with information necessary to carry out their function, Sections 311-312 of

EPCRA require information on chemicals stored at your cooperative to be submitted to LEPCs, SERCs, and the fire department. These requirements are discussed in Section 6.2.

The Occupational Safety and Health Act (OSHA) requires a Material Safety Data Sheet (MSDS) to be prepared for each hazardous chemical stored at a facility. MSDS should accompany every product you purchase, or should be available from the manufacturer. OSHA also has regulations on labeling containers of hazardous substances, and on storing flammable and combustible materials. These requirements are discussed in Section 6.3.

6.2 EPCRA REPORTING REQUIREMENTS

There are a number or requirements in EPCRA for reporting your use of hazardous substances at your cooperative, and these requirements vary depending on the types of products used. The following sections describe the various reporting requirements.

6.2.1 MSDS Reporting Requirements

EPCRA Section 311 requires facilities to submit MSDS sheets or a list of MSDS sheets and associated information for the hazardous chemicals you use to the LEPC, the SERC, and the fire department. A list of hazardous chemicals as defined in EPCRA can be found at 40 CFR 372.65.

USEFUL TIP

Contact your LEPC, SERC, or fire department for information on where to obtain the appropriate MSDS notification forms.

6.2.2 Tier I and Tier II Reports

Section 312 of EPCRA outlines requirements for Hazardous Chemical Inventories. Under Section 312, you must provide chemical inventory data to the LEPC, the SERC, and the fire department for any chemical for which you have an MSDS sheet **and**:

- Is a hazardous substance present in excess of 10,000 lb; or
- Is an extremely hazardous substance present in excess of 500 lb. or the Threshold Planning Quantity.

How to identify hazardous and extremely hazardous substances.

EPCRA defines hazardous and extremely hazardous substances. The lists of these substances can be found at 40 CFR Parts 302.4 and 355, respectively. These tables provide reportable quantities or threshold planning quantities for each listed substance.

Hazardous Chemical Inventory Reporting

The Hazardous Chemical Inventory consists of Tier I information and/or Tier II information. If your cooperative meets either of the criteria above, the minimum reporting requirement is to submit a Tier I form to the LEPC, the SERC, and the local fire department. The Tier I form provides aggregate information on hazardous chemicals and includes estimates of the maximum and average daily amounts present, and the location of the chemicals.

USEFUL TIP

Forms for submitting Tier I and II information should be obtained from the SERC. Your local fire department may be able to help you obtain them.

Upon the request of the LEPC, SERC, and local fire department, your cooperative may have to submit Tier II information. Tier II information is similar to Tier I, except that it must be chemical-specific, rather than aggregate information. A facility may voluntarily submit Tier II data instead of Tier I (especially if you believe you will have to submit Tier II data anyway). Tier I data must be submitted by March 1 annually (for the preceding calendar year).

6.2.3 Toxics Release Inventory

TRI Reporting

Section 313 of EPCRA has requirements for certain facilities to provide information on the amount of toxic chemicals released (to air, water, sewer, landfill, etc.). This information goes into the Toxics Release Inventory (TRI) TRI reporting is required for any facility that:

- Has 10 or more full-time employees;
- Falls under SIC Codes 20 through 39, and power generation facilities with SIC Codes 4911, 4931, and 4939 (see below); **and**
- That manufactures, processes, or otherwise uses a toxic chemical as identified in the EPCRA Title III list of lists, in quantities exceeding the specified quantities.

Recent TRI expansion, and impact on Rural Electric Cooperatives

Initially, TRI reporting was only required for facilities that fell under SIC Codes 20 through 39. In May 1997, the list of facility types that must report was expanded, and this expansion included coal and oil-fired utilities and any gas-fired units that burn oil at any given time (i.e., SIC Codes 4911, 4931, and 4939). Since the expansion, rural electric cooperatives that are generation and transmission facilities, as well as those that use diesel generators from time to time to generate electricity for their customers, all may fall within the requirements. See Section 6.3 for information on guidance to help you determine if you must report to the TRI, based on your facility's power generation activities.

EPA has developed a form for TRI reporting, referred to as "Form R" and it can be obtained from EPA and state officials administering the EPCRA program. This form is to be submitted by July 1, 1999 and every year thereafter. The list of chemicals subject to EPCRA Section 313 requirements is found in the Title III List of Lists (found at 40 CFR 372.65).

6.3 HOW SHOULD DIFFERENT HAZARDOUS PRODUCTS BE SAFELY MANAGED?

The goals of safe management of hazardous products are to keep the risk of exposure to those substances small, prevent their release to the environment, and keep them from mixing. Achieving these goals requires following proper use and storage procedures. The key to properly using and storing hazardous products is knowing their hazardous properties.

USEFUL TIP – MINIMIZING EXPOSURE

Exposure of personnel to a hazardous product could cause a serious illness. In addition to the proper use and handling practices discussed in this section, minimizing this risk requires knowing the protective equipment to use when using the substances, and knowing the exposure limits (provided in the OSHA regulations at 29 CFR 1910.100 Subpart Z). Protective equipment and exposure limits will not be discussed further in this document

6.3.1 Hazardous Properties

The two main categories of hazardous products are **physical** and **biological**.

Hazardous properties of the various products you use at your cooperative can be divided into two categories: physical and biological. Substances that pose physical hazards include ignitability, corrosivity, and reactivity. These types of subsances can cause heat or explosions or can otherwise destroy materials. Substances that pose biological hazards are toxic, noxious, or irritants. These types of substances can cause short- or long-term illness or death but do not cause physical damage. MSDSs for the

substances your cooperative uses should indicate the type of hazard the substance poses.

Both physical and biological hazards must be considered in deciding how and where the substances are to be used or stored. Sometimes one material or group of materials has several hazardous properties. And sometimes, even though two products have the same hazardous property, they cannot be used or stored together. Finally, there are four types of hazardous substances that will always produce a reaction if mixed with one another: flammable, corrosive, toxic, and reactive. To make the right safe management decisions, it is important to know something about the "hierarchy of hazards."

Hierarchy of Storage Hazards

The first rule of the hierarchy of hazards is that the physical hazard is usually more important than the biological hazard (see box). Therefore, materials with the same physical hazards should be managed separately from materials with different physical hazards.

HIERARCHY OF HAZARDS

Hierarchy of hazards for storage of hazardous products: 1. physical hazard, 2. severe biological hazard, 3. lesser biological hazard.

After the materials are safe from their physical hazards, thought should be given to the biological hazards each material poses, especially toxicity. Toxicity is a severe biological hazard and toxic materials must be kept separately from all other materials.

Noxious and irritants are less severe.

Less severe biological hazards are noxious and irritant materials. When properly stored in closed containers, they are not a serious threat to workers or the environment. And, if they are released in a fire or a spill, emergency response personnel can usually protect themselves from exposure. Therefore, noxious and irritant materials can be stored with other types of materials. For instance, noxious materials can be stored together with toxic materials. Irritant materials, if they are biological irritants, can also be stored with toxic materials. If they are mild acids or bases, irritant materials can be stored with similar corrosives. However, if a material is corrosive and noxious, it should be stored as a corrosive (because the physical hazard is higher in the hierarchy than the biological hazard).

Store different types of materials separately.

Two types of materials, toxics and reactives, should always be kept away from other types of materials. They should be kept in locked storage areas so that only authorized personnel have access to them. If a material is both reactive and corrosive it should be stored as a reactive material. If a material is toxic and ignitable, it should be stored as an ignitable material but separately from materials that are only ignitable. For example, materials that are both toxic and ignitable could be stored in a locked, fire-safe locker in an ignitable materials storage area.

That means storing them in three ways: first, so that those substances that pose physical hazards do not cause damage to containers and allow the products in those containers to leak out; second, so that, if the substances do leak, they do not mix with other substances to cause fire, explosion or toxic chemical releases; and third, so that if the substances leak, the combination of substances in the storage area does not make it even more difficult for emergency response personnel to respond to a fire or spill.

6.3.2 Avoiding Hazards in Use and Storage

Use and storage in openable containers

Most of the hazardous products you use regularly (such as solvents, fuels, acids), will be contained either in equipment or in containers (bottles, cans, etc.) near where they are used. In locating areas where hazardous products stored in **openable** equipment or containers are to be used, you need to consider both the physical and biological hazards of those substances. To reduce the risk to your health and safety, it is important to keep openable containers or equipment closed when not using or working with any substance. In both use and storage, when hazardous products are in **closed or sealed** equipment or containers, the physical hazards become more important than the biological hazards. Because the containers/equipment are expected to be closed and in good condition, the risk of exposure to the biological hazards of the material is expected to be very small.

Use and storage in sealed containers

Characteristics of Safe Storage Areas

Use barriers to separate.

Hazardous product storage areas can be located indoors, outdoors, or in both places. For either indoor or outdoor storage areas, the best way to separate materials that have different types of physical hazards is to put a physical barrier, such as a wall, between them. OSHA requires that flammable products be stored separately from all other products, in fire-safe lockers or rooms (29 CFR 1910.106). If the amounts of product you store are small, you might store each different hazardous product in a separate fire-safe locker. If separate rooms or lockers are not available

for storing products that have hazardous properties other than flammability, it is advisable to have different storage areas for each type of product, separated by at least 2 meters or approximately 6 feet of open space. These separate areas should have barriers on the floor of the storage area, such as a row of sandbags or a concrete curb, to prevent spills or leaks of incompatible chemicals from mixing. A roof or cover for an outdoor storage area should be provided to protect the containers from the weather.

Secondary containment

Both outdoor and indoor storage facilities should be equipped with secondary containment, which is any device or structure that prevents a spill or leak from reaching the environment. One of the most effective secondary containment methods that can be used in an outdoor storage area is a concrete or asphalt pad surrounded by a berm or curb. The pad and berm prevent any spilled or leaked material from coming in contact with the soil. If a berm is not available, sandbags or absorbent socks around the perimeter of the area will provide some containment for a short period of time after a spill. Within buildings, depending on construction of the building, the walls and floor, provide secondary containment for preventing environmental releases.

One of the least expensive secondary containment devices consists of a metal tray covered by a metal grate, which can be used for 55-gallon drums and smaller containers. The container sits on top of the metal grate so that any material or waste that is released from the container simply falls through the grate and is collected by the metal tray underneath. The tray must be large enough to hold the entire volume of the container and should be protected from rainfall.

Location of outside storage.

For outdoor storage areas, location also is a very important consideration. Storage areas should be located on pavement, not on the bare ground and not on gravel-covered parking areas. Even on pavement, however, some areas are more environmentally sensitive than others. For instance, a storage area should not be located adjacent to a stream, creek, river, or any drainage to them because if a spill or leak were to occur, the hazardous product could get into the surface water and cause damage to wildlife, domestic animals, or humans. Storage areas should not be located next to sandy soil or gravel areas because liquids move more quickly through these types of surfaces and spread contamination more rapidly to the environment.

Similarly, storage in high-traffic areas should be avoided. The fewer vehicles or unauthorized individuals that come in contact with the hazardous products, the lower the risk of a spill or release occurring. It is

also important that fire fighting equipment (i.e., fire extinguisher) can be easily accessed from the storage location.

Handling Leaking Containers of Hazardous Products

When handling a leaking container, the objectives are to prevent human exposure to the material or waste and to keep it from reaching the soils, drains, sewers, or surface water. The first step is to stop the leak if it is possible to do so safely. If the leak occurred because the lid or top of the container was not secure, the lid should be tightened. If the leak occurred because the container broke or rusted-through, the material in the leaking container can be transferred to a new container. A leaking container can be "overpacked" by placing it within a larger container, so that any leaking material is contained within the outer container.

6.2.3 What Are OSHA Labeling Requirements?

Labeling is very important for the following simple reasons.

- Even though hazardous products that enter the workplace are already labeled, there are all kinds of opportunities for them to be placed in a container that is unlabeled. Labels are often misplaced as well, leaving the past contents of a container to be a mystery.

- Since hazardous products are stored where many individuals are working, one person might know what is in the container, but other individuals, such as fire fighters responding to a spill, need to know the contents of the container as well so that they can wear appropriate personal protective equipment and use the most effective technique to clean up a spill or fight a fire.

Why label?

- Human memory does not work perfectly all the time. It may be easy to remember what is in one drum, but when five or six are added, sometimes they all look the same. Even if you are able to keep track of which container is which, the other workers who use the containers may not.

- To ensure that violent reactions do not occur, certain hazardous products must be stored away from others. If drums are not labeled, it is very easy for incompatible chemicals to get mixed.

For all of the above reasons, OSHA regulations require that before any material is stored, it must first be labeled. These regulations, found at 29 CFR 1910.1200 are known as the Hazard Communication Requirements. The regulations contain two types of labeling requirements: labeling individual containers and labeling storage areas.

USEFUL TIP

Regulations other than OSHA (including the Toxic Substances Control Act [TSCA] [See Chapter 2] and the Resource Conservation and Recovery Act [RCRA] [See Chapter 3]) also contain detailed requirements for labeling various types of hazardous product.

How to Label Containers

A label on a container must include the item name and hazardous properties associated with the contained material, such as “ignitable” or “toxic.” When a product is labeled by the manufacturer, it contains the following information:

Manufacturers label information.

- The common name of the material
- The names of all hazardous chemicals contained in the product
- A list of all hazardous properties
- Symbols for the hazardous properties
- Coded information on specific risks and safety precautions
- The name and address of the manufacturer.

When hazardous products are stored in containers other than the ones they came in, for instance, when you have put paint into a temporary container to mix or thin it, the new container must also be labeled. But not all the information printed by the manufacturer must be placed on this temporary container. The label for the new container must include the following:

What to put on your labels for your products.

- The name of the material
- A list of all hazardous properties
- The symbol for the hazardous property.

For example, a temporary container of ignitable paint would have the following information:

PAINT
IGNITABLE
The flame symbol

Labeling methods

Labeling of individual containers, ranging from a pint-size can to 55-gallon drum to storage tanks holding thousands of gallons, can be accomplished in a variety of ways. A stencil and spray paint can be used to physically paint the label on the side of the container. A permanent magic marker can be used to write on the side of the container, or a plastic coated paper label can be stuck to the container. When selecting a labeling method, consider whether the container will be stored indoors, where it is protected from the weather, or whether it will be stored outdoors. If the container is stored outdoors, select a labeling method that can withstand the effects of rain, snow, and sun. Containers that are stored outside should be checked periodically to ensure that the label is in place and legible.

Labeling Empty Containers to Be Reused

Be sure to relabel reused containers.

If an empty container is to be reused to store hazardous product, it must first be re-labeled to reflect its new contents. Before any re-labeling is done, it must be empty, dry, and in good condition. Your state environmental office should be contacted for instructions on whether and how to reuse containers.

Destroy old label before reusing container.

If a container is to be reused, the old label must be removed or obliterated. This can be done by painting over a painted or inked label or by physically removing the plastic coated paper label before re-labeling the container. To re-label containers, stencils and spray paint can be used to physically paint the label or a permanent marker can be used to write on the container.

How to Label Storage Areas

Hazardous products storage areas also must have signs. Personnel not familiar with the work site should be aware of the presence of hazardous products at the storage area. Each separate storage area must have a sign indicating what type of materials are stored in it These signs must be large enough to be read from 7.5 meters or 25 feet away. To prevent co-storage of incompatible materials, the storage areas must clearly indicate what goes where.

6.4 RESOURCES

6.4.1 References

The following documents can help determine whether your facility must report to the TRI database.

EPA 1997. *Addendum to the Guidance Document for Newly Added Industries*. (Contains industry-specific guidance on TRI expansion).

EPA 1997. EPCRA 311 Q&A Document: *Helping to Define Who and What TRI Expansion Applies To*. Available on the internet at www.EPA.gov\opptintr\TRI\addfinl.PDF.

6.4.2 Hotlines

OSHA Hotline to answer questions about worker safety standards: (301) 515-6796

RCRA/CERCLA/EPCRA Hotline: (800) 424-9346

7. HOW DO I COMPLY WITH SPILL AND CHEMICAL RELEASE REQUIREMENTS

If you manage PCBs or equipment containing PCBs, or hazardous substances and/or wastes at your cooperative, the possibility exists that even if you practice the best management techniques you may have a spill or release. In addition, there are emergency preparedness, emergency notification and recordkeeping requirements in various regulations that you must comply with if you manage these types of materials. This chapter provides you with the Federal regulatory requirements for emergency preparedness and responding to a release, including the notification and recordkeeping requirements. Other notifications and recordkeeping requirements for managing hazardous wastes and substances are provided in Chapter 3 (wastes) and Chapter 6 (substances).

USEFUL TIP

Your state and municipality may have requirements in addition to the Federal requirements that you must comply with. You should check with your state or municipal environmental agencies to determine these requirements.

7.1 WHAT DO I DO IF THERE IS A SPILL OR RELEASE?

Regulations governing responses to spills or releases.

The Emergency Planning and Community Right to Know Act (EPCRA) is the major regulation governing responses to spills or chemical releases. EPCRA emergency response and follow up requirements can be found at 40 CFR 302 and 40 CFR 355. Both the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) also have emergency response requirements. EPCRA and CERCLA emergency response requirements are presented in the following sections. Some RCRA requirements are the same as EPCRA requirements, and are covered below. The remaining RCRA requirements are discussed in Section 7.2.

USEFUL TIP

If you have not already done so, your cooperative should designate an emergency coordinator to manage your cooperative emergency response actions in case of a spill or chemical release. If you are a small quantity generator (see Chapter 3), you are required under RCRA to designate an emergency coordinator. The emergency coordinator should become familiar with the EPCRA emergency response requirements.

7.1.1 Immediate Actions

If a spill or accident (e.g., fire, explosion, tank rupture, etc,) resulting in a spill or release occurs at your cooperative, in addition to responding to the spill or accident, you or your

staff may be required, under EPCRA (Section 304, at 40 CFR 302), to take swift action by providing immediate notification to emergency response agencies. You must immediately notify emergency response agencies if either:

When to notify

- The substance spilled is an "Extremely Hazardous Substance" and the amount equals or exceeds the specified Reportable Quantity listed in Appendices A and B of 40 CFR 355 (see Chapter 6). You cooperative should be aware of whether any substances it stores or uses is extremely hazardous.

- The substance spilled is a "Hazardous Substance" listed in EPCRA Table 302.4 (found at 40 CFR 302.4) and the amount equals or exceeds the specified Reportable Quantities in that table. These are substances for which notification under CERCLA 102 and 103(a) also are required (see Chapter 6 for reporting requirements).

- The spill has entered the surface or groundwater (this will include storm sewers and drains that discharge to water.

If any of these criteria apply to your spill or release (or you think they apply), you must make the following notifications:

Who to Notify

- Local Emergency Planning Committee (LEPC).
- State Emergency Planning Commission (SERC).
- National Response Center (NRC).

Figure 7-1 is a form that you can complete with the appropriate emergency notification numbers, and place near telephones in your cooperative. Figure 7-2 is a form that you can complete and place in areas where hazardous materials (wastes and products) are stored or managed.

USEFUL TIP – SPILLS DURING OR ASSOCIATED WITH TRANSPORTATION

If a spill occurs with respect to transportation or storage incident to transportation, it is acceptable to notify the authorities by dialing 911, or calling the operator in the absence of an emergency telephone number.

IN THE EVENT OF A SPILL,

☎IMMEDIATELY NOTIFY☎

National Emergency Response Center:

1-800-424-8802

State Emergency Response Commission:

Fill in

Local Emergency Planning Committee:

Fill In

IF SPILL OCCURS DURING TRANSPORTATION - DIAL 911 OR OPERATOR IF 911 NOT AVAILABLE

Figure 7-1. Emergency Response Notification Information

EMERGENCY RESPONSE INFORMATION

Emergency Coordinator
Name: _____

Telephone: _____

Fire Extinguisher
Location(s): _____

Spill Control Materials
Location(s): _____

Fire Alarm (if present)
Location(s): _____

Fire Department
Telephone: _____

National Response Center
Telephone: _____

Figure 7-2. Emergency Response Information Form

When you do not have to notify.

Notification is **not** required for the following circumstances:

- Federally permitted discharges under CERCLA 101(10),
- Releases which would result in exposure only to persons at your cooperative but have not resulted in a release to the surface water or groundwater,
- Releases from a facility that produces, uses, or stores no hazardous materials,
- Releases of a pesticide applied in accordance with Federal Insecticide, Fungicide, and Rodenticide Act registration and labeling requirements (see Chapter 11),
- Continuous releases as defined under Sections 103(f) of CERCLA. However, it is recommended that you make a notification if there is any doubt of applicability because serious fines could result if you are supposed to notify and you do not.

The function of the emergency agencies listed above will be to coordinate response activity to your spill or accident, and prevent harmful effects to the public and community at large. These agencies also may provide instructions to you regarding appropriate response procedures.

Report as soon as you can.

It is important to report any reportable spill as soon as practical. In making the notifications, the person making the report (see box) should spend a few moments to gather information to provide in the initial notification. To the extent possible, the following information should be provided:

Information to Provide

- Facility Name, and EPA Identification Number, if applicable.
- Date and time of accident.
- Type of accident (e.g., spill, fire, explosion, etc.)
- Chemical Name/Identity of material(s) released.
- Location of the chemical.
- Whether the material(s) is extremely hazardous (listed in 40 CFR 355 appendix A and B) or a hazardous substance (listed in 40 CFR 302.4).
- Estimate of the quantity of any material that was released
- Time and duration of the release

- Whether the release was to the air, water, and/or land
- Any known or anticipated acute or chronic health risks associated with the emergency
- Advice regarding medical attention necessary for exposed individuals
- Proper precautions to take as a result of the release, including evacuation
- Name and telephone number of the person(s) to be contacted for further information

According to EPCRA, the initial notification is required "immediately" upon discovering a spill. The term "immediately" is not further defined. Thus the person making the report must use good judgement in determining how much time to spend in collecting information prior to making the notification.

7.1.2 Follow-up Actions for a Spill or Release

Follow-up Notification

After the initial communication is established with the appropriate agencies, your cooperative's designated emergency coordinator will be the primary contact and person in charge of containment and cleanup procedures. Following the initial notification, the emergency coordinator must provide written follow-up emergency notice or notices, as more information becomes available. Follow-up notification(s) should be provided as soon as practicable, usually within 24 hours. The written notice(s) must update information provided in the initial notification and must also describe:

What to include in notification.

- Actions taken to respond to and contain the release
- Any known or anticipated acute or chronic health risks associated with the release
- Where appropriate, advice regarding medical attention necessary for exposed individuals.

Your State also may have requirements for notifications, and emergency response actions (see box).

USEFUL TIP

To identify the appropriate State agencies, call the EPCRA Hotline at 1-800-424-9346 or 703-412-9810.

7.2 OTHER NOTIFICATION/RESPONSE AND REPORTING REQUIREMENTS

Other regulations also have require-ments.

EPCRA is the primary legislation that governs spill response, notification, and emergency preparedness activities at your cooperative. However, several other environmental regulations also contain similar requirements that may apply to your facility. Table 7-1 lists these other regulations The most relevant regulations to rural electric cooperatives are discussed in more detail in this section.

USEFUL TIP – PREPARING FOR AND EMERGENCY SPILL/RELEASE

The most important steps that you can take now to prepare for an emergency spill or release is to plan and train ahead of time. Read this section, become knowledgeable in the notification, response, and reporting requirements and make sure that your staff knows what to do in the event of an emergency. Assess whether you have the capability to appropriately respond and clean up a spill and if you don't, then consider retaining a spill response specialist.

Table 7-1. Major Federal Regulations that Address Notifications, Spill Response, and Emergency Preparedness

Subject	Law	Reference to Regulation
Federal Response to Oil Spills, Liability, Notification, SPCC Plans, Reportable Quantities	Clean Water Act amended by Oil Pollution Act	40 CFR 110 through 117
Risk Management Plans	Clean Air Act 112(r)	40 CFR 68
List of Hazardous Substances/Notification	CERCLA 102, 103/SARA 313	U.S.C. §125, 40 CFR 302.4 and 372.6
Hazardous Waste List, Labeling/Marking, Disposal and Storage of Spill Cleanup Materials	RCRA Part 261, 262, 264, and 265	40 CFR 261, 262, 264, and 265
PCB Spill Cleanup	Toxic Substances Control Act	40 CFR 761.120, et seq.
Notification of discharge of hazardous waste to POTW	CWA/RCRA	40 CFR 401.12(p)
Spill Notification, Emergency Planning and Preparedness	EPCRA	40 CFR 355 and 302

7.2.1 EPCRA Notification and Emergency Preparedness Requirements

As mentioned in Section 7.1, when a spill is discovered, EPCRA requires immediate and follow-up notification. In addition to notification requirements, EPCRA addresses protection of the community through establishment of agencies (the LEPC and SERC) to coordinate spill response in the event of an emergency (see Section 7.1). To provide these agencies with information necessary to carry out their function, Sections 311-312 of EPCRA require information on chemicals be submitted to LEPCs, SERCs, and the fire department. Compliance with EPCRA Sections 311-312 is discussed in Chapter 6.

7.2.2 RCRA Requirements

RCRA has both emergency preparedness requirements and emergency response requirements. The emergency preparedness requirements mandate that facilities plan their response to spills or releases of hazardous wastes. The emergency requirements are procedures facilities must follow in the event of a spill or release. Note that RCRA Subtitle I contains emergency response requirements for leaking underground storage tanks (USTs). Emergency preparedness requirements are detailed in Chapter 3 (Section 3.3.4), and emergency response requirements are discussed below.

RCRA waste generators have emergency preparedness requirements to comply with.

The RCRA emergency preparedness requirements apply to cooperatives that are classified as large or small quantity hazardous waste generators. Conditionally exempt small quantity generators (CESQGs) are exempt from these requirements (see Chapter 3, Section 3.2.1 for information on determining generator status). However, it is recommended that CESQGs also comply with the RCRA emergency preparedness requirements.

RCRA Emergency Response Requirements

In the event of a hazardous waste release, RCRA emergency response requirements contain the following procedures for responding to a spill or release of hazardous waste(s):

Hazardous waste release require-ments.

- Contain the flow of hazardous waste to the extent possible, and as soon as is possible, clean up the hazardous waste and

USEFUL TIP

Under RCRA, materials used in cleanup operations following a hazardous material or oil spill are considered hazardous wastes or PCB wastes if the spill contained PCBs. These cleanup materials are considered part of your total monthly accumulation and may affect your generator status (see Chapter 3, Section 3.2.1 for information on determining generator status).

any contaminated materials or soil.

- In the event of a fire, call the fire department and, if safe, attempt to extinguish the fire using a fire extinguisher. After the fire is out, contain the release as described above.
- In the event of a fire, explosion, or other release that could threaten human health outside the facility, or if you know that the spill has reached surface water, follow the instructions provided in Section 7.1.

RCRA UST Emergency Response Requirements

UST releases: when to notify.

RCRA also includes emergency response requirements for leaking USTs (in 40 CFR 280.53). These requirements include notification, response, and cleanup procedures.

Initial Notification Requirements

If your cooperative has USTs that contain hazardous substances or hazardous wastes, and you identify any of the following conditions associated with your UST(s), you must make a report:

- Unusual operating conditions exist (e.g., erratic behavior of product dispensing equipment, sudden loss of product from the UST system, or an unexplained presence of water in the tank) unless due to defective but not leaking equipment;
- Monitoring results (see Chapter 5) indicate that a release has occurred; or
- Regulated substances are observed or discovered at the UST site (e.g. free vapors in the soils, basements, sewer and utility lines, and/or a sheen on nearby surface waters).

UST releases: who to notify.

Your report must be made within 24 hours to the State UST permitting agency or the EPA Region, whichever currently administers the UST program for your facility (see Chapter 5 for more details).

In addition to the notification requirements, RCRA (40 CFR 280) requires that you immediately contain and clean up a release from an UST that contains:

- Petroleum, where the spill exceeds 25 gallons or causes a sheen on a nearby surface water, or is less than 25 gallons but cannot be cleaned up within 24 hours.
- A CERCLA hazardous substance (listed at 40 CFR 302.4) above the reportable quantity, or below the reportable quantity but cannot be cleaned up within 24 hours.

Following notification, response actions required for leaking USTs include taking immediate action to prevent any further release of the regulated substance into the environment; and identifying and mitigating fire, explosion, and vapor hazards. Within 20 days the owner/operator must submit a report summarizing initial abatement measures including:

Reporting: UST abatement.

- Removal of the regulated substance from the UST;
- Inspection of aboveground or exposed below ground releases and preventing migration of the substance into surrounding soils and ground water;
- Continued monitoring and mitigating safety hazards;
- Remedying hazards posed by contaminated soils that have been excavated or exposed; measuring for the presence of a release where contamination is most likely to exist.

Several follow-up procedures (initial site characterization, free product removal, and investigations for soil and groundwater cleanup, and corrective action plan) are also required. These are discussed in Chapter 5, and can be found in 40 CFR 280.63 through 280.66, respectively.

Notifying: State require-ments.

Many States have UST permitting programs which have notification requirements. You should contact the appropriate implementing agency (State or EPA region) for your cooperative for additional requirements that may apply. Chapter 5 provides a list of State implementing agencies for USTs.

7.2.3 Clean Water Act/Oil Pollution Act Requirements

Oil Spills: When to notify

The Clean Water Act (CWA) contains notification requirements that apply to spills of oil and hazardous substances. In the case of a spill of **oil,** either at your facility or from facility equipment, that enters a “water of the

U.S.," you are required to notify the National Response Center (see Section 7.1) as soon as you have knowledge of the following conditions:

- The discharge may cause a violation of a water quality standard;
- The discharge causes a film, sheen, or discoloration of the surface of the water, or a sludge or emulsion beneath the surface or upon an adjoining shoreline.

Hazardous substance spill: When to notify

In the case of a spill of a hazardous substance released over a 24 hour period at your facility or from facility equipment, and the released material enters a "water of the U.S." in a quantity equal to or exceeding the reportable quantity in CERCLA Section 102 (in 40 CFR 302.4), you must notify the National Response Center (40 CFR 117.21). Note that "waters of the U.S." is a wide-encompassing definition which includes wetlands. Also note that if a spill enters a separate storm sewer that discharges to a surface water, it is subject to notification requirements. If the spilled material enters a sewer that discharges to a Publicly Owned Treatment Works (POTW), and it is not from a mobile source (e.g., a truck) it is not subject to these CWA notification requirements; however, you must immediately notify the POTW.

Spill Prevention, Control, and Countermeasures Provisions

When to prepare an SPCC plan.

The Clean Water Act also contains Spill Prevention, Control, and Countermeasures (SPCC) provisions that may be applicable to your cooperative if you store oil onsite. Although there are certain exceptions contained in 40 CFR 112, the criteria for when an SPCC plan is required are as follows:

- You have more than 660 gallons of oil in a single above ground tank
- You have more than 1,320 gallons in a number of above ground tanks
- You have more than 42,000 gallons in underground tanks.

The purpose of the SPCC requirement is to ensure that adequate measures are taken to prevent releases of oil or hazardous substances.

RESOURCE

U.S. EPA Region 7 has developed a manual on preparing SPCC plans. See Section 7.4 for the reference.

Guidelines for information to be addressed in SPCC plans is specified in 40 CFR 112.7. Because SPCC plans include numerous, facility specific details, one should consult 40 CFR 112.7(e) for more information. In general, the plan should:

SPCC Plan Requirements.

- Address corrective actions for previous spills. If there is reasonable potential for spills, include a prediction of the direction, rate, flow, and quantity of oil or hazardous substance which would result from a spill.

- Address provisions for secondary containment and/or diversionary structures or equipment (e.g., dikes, weirs, curbing) that prevent oil from reaching navigable waters.

- If applicable, include a demonstration of why installation of equipment (as described above) is impractical. Impracticability pertains primarily to those cases where severe space limitation or other physical constraints may preclude installation of structures or equipment to prevent oil from reaching navigable water.

- Include a discussion of how your cooperative is in compliance with any applicable state regulations regarding spill control measures and specific techniques listed in 40 CFR 112.7(e).

Your SPCC plan must be reviewed once every three years. The plan must be modified within six months if a "significant change" occurs at your cooperative. Review and appropriate modification is also required if new field-proven technology has been developed that will significantly reduce the likelihood of a spill at your cooperative. The plan must be reviewed and approved by a registered Professional Engineer. You should consult 40 CFR 112 for more detail on the SPCC plan requirements.

Oil Pollution Act Requirements

OPA Facility Response Plans

The Oil Pollution Act (OPA) amends the CWA to include requirements for facility response plans. Facility response plans are required for all facilities that could cause "substantial harm" to the environment. The determination as to whether a facility could cause substantial harm to the environment may be made through two methods:

- Through a self-selection process (EPA has established criteria located in 40 CFR 112, Appendix C, to assist facilities in making the determination).

- By a determination of the EPA Regional Administrator.

Factors EPA uses in selecting substantial harm facilities.

In determining whether a facility qualifies as a "substantial harm facility," EPA considers factors similar to the self selection factors, and also considers the type of transfer operations at a facility, the facility's oil storage capacity, lack of secondary containment, proximity to environmentally sensitive areas, or drinking-water intakes, and/or the facility's spill history. These factors and how they are applied are spelled out in a flow chart located in Appendix C of 40 CFR 112 ("Flow Chart of Criteria for Substantial Harm").

The EPA Regional Administrator will notify the facility if EPA determines that the facility poses a threat of "substantial harm." The facility response plans should be submitted to the EPA Regional Administrator. Upon request, a copy of the facility response plan should also be provided to the LEPC.

The time-frame in which the response plan must be submitted will vary depending on your status of operation and whether you have made a self determination or EPA has made the determination. The following provide the time-frame for submittal or Facility Response Plans:

Facility response plan preparation time frame.

- If EPA notifies your cooperative that you are required to submit a facility response plan, you have **six months** to prepare and submit it.

- If your cooperative is newly constructed, you are required to submit the facility response plan **prior to the start of operations** and then **after** 60 days, make adjustments to reflect changes that occur during the startup phase.

- If your cooperative undergoes a planned change in design, construction, operation, or maintenance that places it in the designation of a "substantial harm facility," then you must submit the facility response plan **prior to the start of operations** of the portion of your cooperative undergoing the changes.

- If your cooperative falls under the "substantial harm facility" designation because of an unplanned event or change in characteristics, then you have **within six months of the unplanned event** to submit your facility response plan.

Contents of facility response plans.

The contents of the plan should follow the format of the "model facility specific response plan" included in 40 CFR 112.20 Appendix F. In addition, you must coordinate your plan with the LEPC. If you have prepared an equivalent response plan to meet other State or Federal requirements then you must ensure that it contains equivalent elements of the facility response plans. In addition, you must provide a cross-reference section demonstrating such equivalency. All facility response plans must be consistent with the National Oil and Hazardous Substances Contingency Plan and the Area Contingency Plan covering your location. For more information on facility response plans, see 40 CFR 112.7(h) or contact your SERC.

Spills to POTWs or Septic Systems

Spills to POTWs

If a hazardous waste is spilled from your cooperative into wastewater (or a sewer system) that discharges to a POTW, you are subject to both RCRA (if a hazardous waste is spilled) and CWA Pretreatment regulations and must make the following notifications:

- The POTW
- The EPA Regional Waste Management Division Director
- Your State hazardous waste authority

The hazardous waste sewer discharge notification must be in writing, and must include:

- The name of the hazardous waste
- The EPA hazardous waste number (from the RCRA lists (see Chapter 3))
- The type of discharge (e.g., "batch" for a single event spill, such as a drum or container; or "continuous" for a large spill that has not stopped).

If more than 220 lb (100 kg, or approximately 25 gallons) of hazardous waste is discharged to the POTW, then you must also include the following in the notification:

- The hazardous constituents in the waste.
- An estimate of how much (mass and concentration) hazardous waste was discharged to the POTW during the month.
- An estimate of how much hazardous waste you will discharge in the next 12 months.

Septic System Discharges

If the discharge is to a septic system, you must immediately notify the EPA Regional Underground Injection Well Program and the State Underground Injection Program.

7.2.4 TSCA PCB Spill Requirements

The Toxic Substances Control Act (TSCA) regulations contain specific procedures for cleaning up spills of polychlorinated biphenyls (PCBs). The procedures are applicable to all spills of PCBs at concentrations of 50 ppm or greater. In addition to the notification criteria and procedures listed in Section 7.1, you must notify the Pesticides and Toxic Substances Branch of your Regional EPA Office of Prevention, if the following conditions exist:

PCB spills: notification.

- The spill is to surface water, sewers, or drinking water supplies.
- The spill directly contaminates grazing lands or vegetable gardens.
- The spill exceeds 10 lb. of PCBs by weight (CWA requires reporting a spill of PCBs of 1 lb. or more to the National Response Center.

If a spill contains PCBs but the above criteria are not met, you still must follow the EPCRA notification requirements in Section 7.1, and TSCA cleanup procedures discussed below. However, EPA TSCA notification is not required.

Upon contacting the EPA, you will receive guidance for appropriate cleanup measures and should begin cleanup as soon as possible, but no

later than 24 hours after discovery. The cleanup procedures for PCB spills are contained in 40 CFR 761 and are summarized below .

PCB spills: cleanup requirements.

The general requirements are to: restrict access to the site, assess the amount of PCBs spilled, clean solid surfaces (typically by swabbing with solvents), remove earthen material (e.g., topsoil, gravel, oyster shells), and replace with clean material. Following cleanup, perform a PCB wipe test on non-porous surfaces (e.g., sealed concrete) and sample porous surfaces (e.g., soil). The wipe test is a standardized test method for non-porous surfaces to determine the residual PCB concentration following cleanup. The level of cleanup required will depend on the nature of the spill (i.e., the quantity and concentration of PCBs), the material onto which it is spilled, and the location and accessibility. Cleanup procedures and post-cleanup sampling methods are described in more detail in 40 CFR 761.125 (b) and (c) and 761.130 and also in "Pocket Field Manual for EPA PCB Spill Cleanup," available from your EPA Region.

PCB spills: documentation.

You must document all spills and maintain records on cleanup, sampling procedures, and analytical results for the samples. Information on these requirements may be obtained from the EPA Region or may be found in 40 CFR 761.130 and 40 CFR 761.125(c)(5), respectively. In addition, special regulations for the disposal of wastes containing PCBs under TSCA may be found in 40 CFR 761.

TSCA Cleanup Requirements for Spills of Less Than One Pound of PCBs or 270 Gallons of Untested Mineral Oil

If the spill involves 1 pound or more of PCBs, or greater than 270 gallons of untested mineral oil , then cleanup procedures are as follows:

- Cordon off the visible spill area plus a 3-foot buffer. Place signs advising personnel to avoid the area. This will minimize the spread of contamination as well as the potential for human exposure.

- If there are no visible traces, estimate the spill area based on the amount of material missing from the equipment or container and immediately cordon off the area of suspected contamination. Record the fact that there are no visible traces and notify the EPA for guidance on statistical sampling to establish spill boundaries.

- Initiate cleanup on hard surfaces and removal of soil and other media (sand, gravel, oyster shells, etc.).

- Perform actions 1 to 4 within 24 hours (within 48 hours for transformers). Complete cleanup as soon as possible.

PCB Spill Cleanup in a Restricted Area

The following are cleanup procedures for PCB spills in a restricted area:

- Clean high-contact solid surfaces (defined in 40 CFR 761.163) to 10 µg/100 cm^2, as measured using a standard wipe test.

- Clean low-contact, indoor, impervious solid surfaces to 10 µg/100 cm^2 Non-impervious surfaces may be cleaned to 100 µg/100 . provided they are encapsulated and the EPA Regional Administrator approves.

- Clean Low contact, outdoor surfaces (impervious or nonimpervious) to 100 µg/100 cm^2.

- Clean contaminated soil to 25 ppm PCBs by weight.

PCB Spill Cleanup at an Outdoor Substation

If the spill occurs in an outdoor electrical substation, then you must perform the following cleanup procedures:

- Clean solid surface to a PCB concentration of 100 µg/100 cm^2, as measured using standard wipe tests.

- Clean soil to one of the following specifications:

  - ✔ 25 ppm PCBs by weight; or

  - ✔ 50 ppm PCBs by weight and place a highly visible label or notice in the area.

  - ✔ If cleanup to 25 or 50 ppm will jeopardize the integrity of the electrical equipment, the EPA regional office may establish an

alternative cleanup method or level and establish a cleanup schedule.

PCB Spill Cleanup in a Nonrestricted Area

- Dispose of easily replaceable household items.
- Clean indoor solid surfaces and high-contact outdoor solid surfaces to 10 µg/100 square cm, as measured by standard wipe tests.
- Decontaminate indoor vault areas and low-contact, outdoor, nonimpervious solid surfaces to 10 µg/100 square cm or to 100 µg/100 cm^2 and encapsulate (subject to the discretion of EPA Regional Administrator).
- Clean soil to 10 ppm PCBs by weight, provided that the soil is excavated to a minimum depth of 10 inches. Replace excavated soil with clean soil, and replace the turf.

7.2.5 CAA Requirements

Accidental releases to air.

The Clean Air Act (CAA) Amendments include regulations concerning accidental releases of hazardous substances to the air. EPA has established a list of 100 extremely hazardous air pollutants that fall under these CAA regulations (the regulations are discussed in Chapter 10). These substances were published in the Federal Register on January 31, 1994 and finalized on April 15, 1996. If your facility possesses one or more of these extremely hazardous air pollutants above a threshold quantity, you were required to have developed a Risk Management Plan (RMP) by 1996. An example of a substance on the list is chlorine, which has a threshold quantity of 2,500 lbs.

Your risk management plan must include the following:

Contents of an RMP

- Documentation of process safety information
- Process hazard analysis of the off-site impact of an accident;
- Documentation of operating procedures;
- Training program;

- Pre-startup reviews;
- Maintenance program;
- Management of Change Program;
- Accident investigation;
- Emergency response program;
- Safety audits;
- Submittal of RMP to EPA, State and local emergency planning committees; and available for public review;
- Registration with the Chemical Safety and Hazard Investigation Board; and
- A hazard assessment of a worst-case scenario.

An RMP is similar to the OSHA standard 1910.119 - the chemical process safety management program for highly hazardous chemicals - that became effective in May 1992. The difference in the programs is the focus. The OSHA regulation is concerned with worker safety, while the CAA regulation is concerned with the safety of the environment and community. In combination with the EPCRA Toxics Release Inventory (TRI) information provided on EPCRA Form R (See Chapter 6), both programs provide the community with knowledge of chemicals present at your facility.

7.3 SUMMARY OF REPORTS AND RECORDKEEPING REQUIREMENTS

Each of the Acts and regulations discussed previously have some recordkeeping requirements associated with written follow-up notification, reports of spills, emergency preparedness, or cleanup. To simplify the recordkeeping requirements, Table 7-2 lists the forms, reports, and records required under each Act. These requirements are in addition to emergency notifications.

Table 7-2. Summary of Recordkeeping Requirements

Act	Recordkeeping Requirements	Reference to Information/Form
CAA	Risk Management Plan	See CAA Sec. 112(r)
EPCRA	Written Follow-up emergency notice(s) after a spill	40 CFR 355.4
RCRA	UST Release Detection Recordkeeping	40 CFR 280.45
OPA	Facility Response Plans	40 CFR 112.20
CWA	SPCC Plan	40 CFR 112
TSCA	Records of spills, cleanup actions, sampling results, and Certification of Decontamination	40 CFR 761.125(b)(3), (c)(5)

7.4 RESOURCES

Your State SERC and RCRA permitting agency should be the primary resources for questions regarding emergency spill response and preparedness. The EPA EPCRA hotline can answer many questions on the Federal Regulations and can refer you to the appropriate state agency for State concerns. The following EPA Hotlines are available during EST business hours to answer questions.

- U.S. EPA RCRA, Superfund, & EPCRA Hotline: 1-800-424-9346 or (703) 412-9810
- U.S. EPA TSCA Hotline, (202) 554-1404
- U.S. EPA Oil Spill Program Information Line, 1-800-424-9346
- U.S. EPA Air Risk Information Support Center, (919) 541-0888

In addition, the following Web sites may provide useful information.

Name	Address	Information
Internet Law Library: Code of Federal Regulations	law.house.gov/cfr.html	CFR Regulations
Questions and Answers Part II for...EPCRA Sections 301-312	http://es.inel.gov/program/exec/qa-tri2.html	EPCRA reporting requirements
EPA Home Page	http://www.epa.gov/epahome/	Starting point for a wide range of information on Environmental Regulations.
National Environmental Compliance Assistance Center	www.hazmat.frcc.cccoes.edu	Compliance

8. HOW DO I COMPLY WITH WASTEWATER AND STORM WATER DISCHARGE REGULATIONS?

Depending on the activities at your cooperative, you may generate wastewater and/or storm water that contains pollutants. In addition, recently, some cooperatives have begun handling wastewater and/or storm water from one or many other facilities adjacent to the cooperative along with their own. This chapter explains your cooperative's responsibilities for complying with the Federal regulations for discharging any wastewater/storm water you generate, as well as any that you accept from others, whether the discharge is to a surface water body, a sanitary sewer, a storm sewer, or a septic system.

Discharge of wastewater is covered by either the Clean Water Act or the Safe Drinking Water Act (SDWA).

Discharge of wastewater will generally be covered by either the Clean Water Act or the Safe Drinking Water Act (SDWA). In 1972, Congress passed the Federal Water Pollution Control Act, now known as the Clean Water Act (CWA), which established the basic framework for protecting the waters of the United States. The Clean Water Act and its regulations focus on keeping toxic and conventional water pollutants out of our rivers, lakes, and oceans. Since industrial facilities are one of the primary sources of such water pollutants, EPA has taken steps to regulate these facilities. The Safe Drinking Water Act mandates that the EPA establish regulations to protect human health from contaminants in drinking water.

Generally, Federal regulations focus on four types of industrial discharges:

Federal regulations focus on four types of industrial discharges.

1. Direct discharges which include any wastewater from an industrial facility that is discharged straight to surface waters (e.g., ponds, lakes, oceans, streams, and wetlands). Storm water discharges are considered one type of direct discharge (40 CFR 122).

2. Indirect discharges which include any wastewater from an industrial facility that is discharged to a publicly owned treatment works (POTW), which subsequently discharges to surface water (40 CFR 403).

3. Underground discharges of wastewater, such as underground injections into Class V wells (including septic systems). These discharges are regulated under Safe Drinking Water regulations (40 CFR 144-148).

4. Land application of industrial wastewater discharges. Land application includes any wastewater from an industrial facility that is discharged to land or crops (40 CFR 401).

These four types of discharges are discussed in the following sections.

8.1 DIRECT DISCHARGES TO SURFACE WATERS

The CWA regulates direct discharges. The National Pollutant Discharge Elimination System (NPDES) program (found in CWA §402) controls direct discharges into surface waters of the United States by issuing permits for those discharges. NPDES permits can be issued by either EPA or an authorized State. Refer to Section 8.4.4 for a list of authorized States.

8.1.1 What Are NPDES Permits and Their Requirements

Your facility must obtain a NPDES permit prior to discharging wastewater.

NPDES permits may contain industry-specific, technology-based and/or water quality-based limits for discharges of pollutants, and establish pollutant monitoring requirements for any facility that discharges directly into the surface waters of the United States. NPDES permits also contain recordkeeping, reporting, and possibly site-specific requirements. A facility that intends to discharge into the waters of the United States must obtain a NPDES permit prior to initiating its discharge. However, the following discharges (according to 40 CFR 122.3) *do not* require NPDES permits:

States with NPDES Permit Authority

As of March 1998, EPA has authorized 43 States and Territories to administer the NPDES program. Of the delegated States and territories, only the Virgin Islands has not been delegated authority for the storm water general permits program as well. Where permit authority has not been delegated to the State or Territory, RECs must apply for permits directly from EPA, rather than from the State authority. EPA has not delegated authority to the following States and Territories:

Alaska	Massachusetts
Arizona	New Hampshire
District of Columbia	New Mexico
Idaho	Puerto Rico
Maine	Texas

- Discharges of dredged or fill material into waters of the United States (these discharges are regulated under CWA Section 404 permits);

- Introduction of sewage, industrial wastes or other pollutants into POTWs by indirect discharges (may require a permit from the POTW);

- Introduction of pollutants from nonpoint source agricultural and silvicultural (e.g., forestry) activities, including storm water runoff from orchards, cultivated crops, pastures.

Discharge Limits

A NPDES permit sets limits, often referred to as "effluent limits," on the amounts of pollutants that can be discharged to surface waters. There are no industry-specific, technology-based limits for RECs. However, your permit may contain discharge limits that are based on Federal or State water quality criteria or standards that were designed to protect designated uses of surface waters, such as supporting aquatic life or recreation. These standards, unlike industry-specific technology-based standards, generally do not take into account technological feasibility or costs. Rather, they are based on levels necessary to protect human health and ecology. Water quality criteria and standards vary from State to State, and location to location, depending on the use classification of the receiving body of water.

Monitoring

NPDES permits require a facility to routinely conduct monitoring of their discharges and submit reports of the monitoring results to the permitting authority (state or EPA). Your permit will specify the monitoring schedule. Such requirements are determined on a facility-specific basis. As part of your monitoring requirements, you also should establish sampling procedures that are accurate, reproducible, and assure quality control. Refer to 40 CFR 136 for test procedures that are required for monitoring. See box for sampling assistance.

USEFUL TIP

The EPA Methods Information Communication Exchange (MICE) support line (run by EPA's Office of Solid Waste) will assist you in developing sampling procedures that will assure EPA will accept your sample results. This support line is menu-driven, and you must leave a message for a technical expert to return your call. The telephone number for the MICE line is (703) 821-4690.

Reporting

There are some reporting requirements that apply to all facilities. Some of these reporting requirements are presented in Table 8-1.

Table 8-1. Reporting Requirements to the Permitting Authority

Event	Reporting Time Frame
Any noncompliance with your permit that may endanger health or the environment	Within 24 hours of becoming aware of violation; written submission within 5 days
Any planned physical alterations or additions to your cooperative	As soon as possible
Any planned changes in your discharge that may result in noncompliance	In advance of changes
Notify the permitting authority of the transfer of the facility to a new owner	As soon as possible

Additionally, you must report monitoring results for wastewater and sludge analysis on a Discharge Monitoring Report (DMR). Separate forms may be provided or specified by the permitting authority for reporting results of the monitoring sludge use or disposal practices (40 CFR 122.41).

Recordkeeping

It is extremely important to keep accurate records of monitoring information. Records of monitoring information must include:

- The date, exact places, and time of sampling or measurements and analyses;
- The individual(s) who performed the sampling or measurements and analyses;
- The analytical techniques or methods used;
- The results of such analyses.

Chain of custody forms are records used to track the custody of a sample from the time of collection to delivery to the analytical laboratory. This form records the sample name, date and time of collection, and the analyses to be performed. It must be signed by the individual receiving the samples) at the laboratory. NPDES permits require that all records related to monitoring must be maintained at the facility for at least 3 years (40 CFR 122.41).

8.1.2 How to Obtain a NPDES Permit if You Are a Direct Discharger

A NPDES permit application may be submitted as either a general permit or an individual permit, depending on EPA or State requirements. General permits, which are usually limited to storm water discharges (see Section 8.1.3), typically are less complicated than individual permits and do not require as much information to apply for the permit or to demonstrate compliance with the permit conditions.

Contact your EPA or State regulatory agency to find out how to obtain a permit application and whether a general or individual permit is required. Complete the application as directed. As part of the permit application, you will be required to analyze your industrial wastewater or storm water for conventional pollutants, such as biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), total suspended solids (TSS), ammonia (as N), temperature and pH. In addition, industrial sectors that are specified in the NPDES regulations are required to analyze for some or all of the 126 priority pollutants. These priority pollutants consist of metal, inorganic, and organic pollutants that were established by EPA in 1976. For a list of the 126 priority pollutants, see 40 CFR 423, Appendix A.

USEFUL TIP

Once you receive your permit, read it carefully and make checklists of requirements. You must follow the monitoring and reporting activities specified in your permit.

8.1.3 Storm Water Discharges

In 1987, the CWA was amended to require EPA to establish a program to address storm water discharges. In response, EPA promulgated NPDES permit application regulations for storm water discharges associated with industrial activity. The term “storm water discharge associated with industrial activity” means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. Normally, storm water discharge permits are applied for separately from the wastewater discharges; however, in the case of large industrial facilities, it is possible for NPDES to address both wastewater and storm water discharges. The purpose of the regulations is to reduce the amount of pollutants in storm water being discharged to surface waters.

You must apply for an NPDES permit if your facility discharges storm water associated with one of the following: (1) any industrial activity as

defined in 40 CFR 122.26(B)14 (e.g., activities associated with steam electric power generating facilities, construction activities, etc.), (2) a large or medium-sized municipal storm sewer system, or (3) if EPA or the State determines that storm water discharges from your cooperative contribute to a violation of a water quality standard or significantly contribute pollutants to waters of the United States. (For a list of activities exempt from obtaining a storm water NPDES permit, please see 40 CFR 122.26.)

8.1.4 What Do I Do as a Storm Water Discharger to Be in Compliance?

Storm water discharges associated with industrial activity must be covered by a NPDES permit.

Storm water discharges associated with industrial activity must be covered by a NPDES permit regardless of whether they discharge to a municipal separate storm sewer system or directly to waters of the United States. If your facility has not yet obtained an NPDES permit for your storm water discharges, then you have two options to comply. You can:

DEFINITION

The term "storm water discharges associated with industrial activity" includes, but is not limited to, storm water discharges from industrial plant yards, material handling sites, refuse sites, and sites used for the application or disposal of process wastewater. Storm water discharges are divided into 11 categories of industrial facilities or activities, which are defined at 40 CFR 122.26.

- Submit an individual permit application; or
- Submit a Notice of Intent (NOI) to be covered under a baseline general permit or a multi-sector general permit.

Whether your facility applies for an individual permit or the general permit (baseline or multi-sector), you will be required to meet certain requirements. These requirements include (1) developing and implementing a site-specific Storm Water Pollution Prevention Plan (SWPPP) which incorporates Best Management Practices; (2) monitoring; and (3) training.

Individual Storm Water Permit Applications—If your facility has storm water discharges and did not participate in a group application, or did not obtain coverage under a general permit by March 1996, you must obtain and submit to the permitting authority an individual permit application consisting of Form 1 (Application Form 1 – General Information: Consolidated Permits Program) and Form 2F (Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity) from the permitting authority. Form 2F requires a facility to submit a site drainage map, a narrative description of the site identifying potential

pollutant sources, and quantitative testing data of pollutant sources. You are required to submit an individual permit application 180 days before starting a new discharge.

General Storm Water Permit Applications – Baseline or Multi-Sector—If EPA is the permitting agency, your facility may be permitted under one of two types of general permits—a baseline permit or a multi-sector permit. Both permits require the development of a SWPPP and periodic discharge monitoring. A comparison of the requirements and applicable deadlines of the baseline and multi-sector general permits is presented in Table 8-2.

USEFUL TIP

Note: If your State is the permitting authority, the State program must be at least as stringent as the Federal program. State programs vary greatly in scope and are not covered by this document. Contact your State permitting authority for assistance.

Industrial storm water dischargers that submit an NOI to be covered by a general permit are generally not required to submit an individual permit application. NOIs must be submitted at least 2 days prior to the commencement of discharge. NOIs must include certain elements, such as:

USEFUL TIP

Most RECs will not qualify for a multi-sector general permit; however, RECs that are steam electric generating facilities would qualify for a multi-sector permit.

- SIC Code or identification of industrial activity;
- Name of receiving water(s), or if the discharge is through a municipal separate storm sewer, the name of the municipal operator of the storm sewer and the ultimate receiving water(s);
- Indication of whether the owner or operator has existing quantitative data describing the concentration of pollutants in storm water discharges;

Table 8-2. Comparison of General Permits

	Baseline General Permit	Multi-Sector General Permit
Eligibility	Prohibits coverage of facilities which have an adverse impact on endangered species.	Prohibits coverage of facilities which have an adverse impact on endangered species and requires permittee to certify there will not be an impact.
Application Deadline	Existing discharges must have submitted Notice of Intent (NOI) by 10/1/92. New discharges must submit NOI 2 days prior to discharge.	Existing permit holders and group applicants must have submitted NOI by 3/29/96. New discharges must submit NOI 2 days prior to discharge.
Storm Water Pollution Prevention Plan (SWPPP)	Requires consideration of generic pollution prevention measures and best management practices. Facilities subject to EPCRA Section 313 reporting requirements are required to incorporate additional measures into SWPPP, and have the plan certified by a Professional Engineer every 3 years.	Requires consideration of generic best management practices and practices specific to Rural Electric Cooperatives. Facilities subject to EPCRA Section 313 reporting requirements are required to incorporate additional measures into SWPPP, however, the plan only needs to be certified by the facility operator.
Monitoring	Monitoring is done for discharge characterization. Requires facilities subject to EPCRA Section 313 reporting requirements for water priority chemicals to monitor for O&G, BOD, COD, TSS, TKN, TP, pH, acute whole effluent toxicity, and any Section 313 water priority chemical for which the facility reports. Does not require ongoing monitoring or reporting, except for those facilities subject to TRI reporting or otherwise specifically required by EPA. Facilities may be exempt from all monitoring if they can certify that there are no significant materials or industrial activities exposed to storm water. Visual monitoring not required.	Visual monitoring is designed to assess effectiveness of the SWPPP and to provide incentive to reduce pollution. Monitoring is not required as a result of reporting status under EPCRA. Facilities may be exempt from monitoring on a pollutant by pollutant basis if they can certify that there are no sources of a pollutant present. Routine (at least quarterly) visual monitoring to assess problems required.
Expiration	Baseline permit expires in 1997.	Multi-Sector permit expires in 2000.

- Certification that a storm water pollution prevention plan has been prepared for the facility (for industrial activities that begin operations after October 1, 1992).

EPA has finalized baseline general permits in those States without NPDES authorization. More recently, EPA finalized the multi-sector general permit which provides coverage for 20 specific industries in the States and Territories without NPDES authorization.

Storm Water Pollution Prevention Plans

Storm water permits require implementation of Storm Water Pollution Prevention Plans (SWPPPs).

If your facility is required to obtain a storm water permit as discussed in 8.1.4, you will be required to prepare and implement a storm water pollution prevention plan (SWPPP). Each pollution prevention (P2) plan is facility-specific, because every facility is unique in its source, type, and volume of contaminated storm water discharges. Regardless of the variations, all plans must include several elements, such as a map, and site specific information, such as:

Useful Tip

Storm water Pollution Prevention Plans (SWPPP) are also known as Pollution Prevention or P2 Plans.

- Facility size and location
- The environmental setting of each facility (e.g., water quality of receiving stream)
- Climate
- The volume and type of discharge generated
- Hydrogeology
- The predicted flow of storm water discharges.

Storm water pollution prevention plans must also address how your facility will complete the following activities:

- Develop a Pollution Prevention Team
- Develop general and specific measures and controls to prevent or minimize pollution of storm water (articulated as Best Management Practices in your plan)
- Test outfalls
- Train employees

- Conduct inspections and evaluations
- Conduct recordkeeping.

Implementing Storm Water Best Management Practices

SWPPPs require the implementation of Best Management Practices (BMPs), which are measures and controls used to prevent or minimize pollution. The most effective BMPs for reducing pollutants in the storm water discharges from your facility are exposure minimization and good housekeeping. Exposure minimization practices reduce the potential for storm water to come in contact with pollutants. Good housekeeping practices ensure that the facility is responsive to routine and non-routine activities that may decrease exposure of storm water to pollutants.

While exposure minimization can usually be accomplished by good housekeeping and covering up or bringing inside potential pollutants at a facility, some facilities may be required to develop additional structural controls to prevent contaminants from reaching storm sewers. Such controls may include cement pads, berms/dikes, covering storage areas and outfalls, installing screens or separators. In a few instances, BMPs, such as detention ponds and filtering devices, may be necessary at your facility, depending on the type of discharge, types and concentrations of contaminants, and volume of flow.

As part of implementing your SWPPP, your facility will be required to conduct monitoring, which may include visual examination of storm water discharges and/or analytical monitoring. Monitoring is required primarily to provide your facility with a means for assessing your storm water contamination and evaluating the performance of your SWPPP. Your facility should also implement recordkeeping procedures that accurately document discharges and inspection and maintenance activities. For further information regarding recordkeeping requirements, please refer to Section 8.1.1. For further discussion of mandatory BMPs, refer to Table 8-3.

Table 8-3. Mandatory BMPs to Include in Your SWPPP

SWPPPs require the implementation of Best Management Practices (BMPs).

BMP	Activity
Good housekeeping	Maintaining a clean and orderly work environment, proper operation and maintenance of equipment, careful material storage and management practices, employee training about good housekeeping practices.

Preventative maintenance	Each plan must include a preventative maintenance program for storm water runoff management devices and equipment. It should also include inspections of facility operations to detect faulty equipment that could contribute to storm water contamination.
Visual inspections	Regular visual inspections of the facility's equipment and areas are required. Inspectors should maintain written records of their inspections, including areas inspected, problems found, steps taken to correct problems. Records should be kept with the SWPPP for at least 1 year.
Spill prevention and response	Areas where spills may occur and their likely drainage points should be identified in the SWPPP. Appropriate material handling, storage requirements, and cleanup procedures must also be described.
Sediment and erosion control	The SWPPP must identify areas that have a "high potential for significant soil erosion" and identify measures to limit the potential erosion. Erosion potential can be reduced using a number of techniques, including soil stabilization methods and runoff diversion or flow velocity dissipation structures. Several erosion control methods are described in EPA guidance documents on preparing SWPPPs.
Management of runoff	The SWPPP must describe existing storm water controls and identify any additional measures that can be implemented to improve the prevention and control of contaminated storm water. Examples include: vegetative swales, reuse of collected storm water, infiltration trenches, and detention ponds.
Employee training	Permittees must develop employee training programs that cover such topics as spill prevention and response, good housekeeping practices, and proper material management. The goals of the training are to teach all employees, at all levels of the organization, the elements of the SWPPP, and to create an overall awareness of storm water pollution prevention concerns.

8.2 HOW DO I MANAGE INDIRECT DISCHARGES?

If you are an indirect discharger, your facility discharges wastewater into a sewer system that leads to a municipal treatment plant, also known as a publicly owned treatment works (POTW). The POTW is typically owned by the local government or a regional treatment plant or sewer authority.

USEFUL TIP

For a list of States with approved pretreatment programs, refer to Section 8.4.4.

Usually, POTWs treat domestic household or office sewage using biological treatment processes. Because certain pollutants present in industrial discharges can adversely affect the POTW's treatment processes or pass through the plant directly to surface water without receiving adequate treatment, POTWs generally cannot handle large quantities of industrial wastewater.

Because of this, Federal pretreatment regulations [CWA § 307(b)] were developed to prevent the discharge of pollutants to the POTW that will:

- Interfere with the operation of the POTW
- Pass through the POTW untreated
- Create problems with disposal of sludge from the POTW
- Cause problems to treatment plant workers from exposure to chemicals.

These regulations, referred to as the Pretreatment Regulations, impose requirements that apply to all industrial facilities discharging industrial wastewater to POTWs. Local POTWs with approved pretreatment programs have responsibility for enforcing pretreatment requirements. To find out if your local POTW has an approved pretreatment program, contact your State permitting authority or the POTW.

8.2.1 Pretreatment Requirements

Pretreatment Regulations are Federal requirements that apply to all industrial facilities discharging wastewater to local POTWs.

The national pretreatment program [CWA § 307(b)] controls the indirect discharge of pollutants to POTWs by "industrial users." Facilities regulated under §307(b) must meet certain pretreatment standards and notification requirements. Refer to Table 8-4 for explanation of the notification requirements in the Federal pretreatment program.

USEFUL TIP

Regardless of whether a State is authorized to implement either the NPDES or the pretreatment program, if it develops its own program, it may enforce requirements more stringent than Federal standards.

Pretreatment requirements can be broken down into two types: requirements for general industry (general pretreatment standards) and requirements for specific industries (categorical pretreatment standards):

1. ***General Pretreatment Standards***—Establish minimum discharge requirements for all industrial discharges. These standards protect POTWs by prohibiting specific waste streams from being discharged by industrial users. Some pollutants that are prohibited under the general pretreatment regulations include:

    - Pollutants that cause pass through or interference at the POTW.
    - Pollutants creating a fire or explosion hazard in the POTW.
    - Pollutants that will cause corrosive structural damage (i.e., any wastewater with a pH less than 5).
    - Pollutants that are solid or viscous that can obstruct the wastewater flow.
    - Any pollutant released at a rate (i.e., loading rate) or concentration that will cause interference at the POTW.
    - Heat in amounts that will inhibit biological activity at the POTW, but in no case, discharges that will cause the POTW influent to exceed 104 degrees Fahrenheit.

Table 8-4. Time Frame for Notification Requirements

Requirement	Time frame
Notify the POTW or State of a discharge of wastewater that could cause problems to the POTW, including slug loading. A slug loading is defined as any relatively large releases of a pollutant that might not ordinarily cause a problem when released in small quantities.	Promptly
Notify the POTW or State of substantial change in wastewater discharge.	Prior to the change
Notify the POTW, State hazardous waste authorities and EPA Regional Waste Management Division Director of a discharge of hazardous waste. This is a one-time notification required of those who discharge more than 15 kg of a hazardous substance a month; or if the substance is acutely hazardous and any amount is discharged. Note: A list of acutely hazardous wastes can be found in 40 CFR 261.30(d) and 40 CFR 21.33(e). This written notification must include (1) the name of the listed hazardous waste (in 40 CFR Part 261); (2) the EPA hazardous waste number; (3) the type of discharge; and (4) a certification that a program is in place to reduce the amount of toxicity of the hazardous waste that is generated, to the degree that it is economically feasible. If discharging more than 100 kg of hazardous waste in one month, the notification must also include: (1) identification of the hazardous waste constituents that are contained in the waste; (2) an estimate of the mass and concentration of the constituents in the waste stream discharged during the month; and (3) an estimate of how much will be discharged in the next 12 months. If any new substance is listed under RCRA and a facility discharges the substance, the facility must notify the authorities cited above within 90 days of the new listing.	Within 180 days after discharge of the listed or characteristic hazardous waste.

- Petroleum oil, non-biodegradable cutting oil or products of mineral oil in amounts that will cause interference or pass through.

- Pollutants that result in the presence of toxic gases, vapors, or fumes in the POTW that may cause acute worker health and safety problems.

- Any trucked or hauled pollutants, except at discharge points designated by the POTW.

2. ***Categorical Pretreatment Standards***—Standards established for specific types or categories of industrial facilities or processes. There currently are no categorical pretreatment standards for the utility industry. However, the POTW may impose its own wastewater discharge limits upon your industrial discharges in order to protect its treatment plant and to meet its own direct discharge permit limits. Where POTW requirements are more stringent than Federal requirements, they will replace the Federal requirements. For specific POTW limits, you must contact your local POTW.

Significant Industrial Users Criteria

A POTW that is responsible for enforcing the Federal pretreatment requirements must issue permits to any industrial discharger that meets at least one of the following criteria:

- Is subject to categorical pretreatment standards
- Discharges an average of 25,000 gallons or more per day of process wastewater (excluding sanitary, noncontact cooling, and boiler blowdown wastewater).
- Contributes a process waste stream which makes up 5 percent or more of the average dry weather hydraulic or organic loading capacity of the POTW treatment plant
- Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

Industrial dischargers meeting at least one of these criteria are called Significant Industrial Users. Significant Industrial Users must report the nature, concentration, and flow of the pollutants in their discharges.

8.2.2 How to Comply if You Are an Indirect Discharger

If you are an indirect discharger, contact the POTW or State to determine whether your facility must obtain a permit.

As an indirect discharger, there are several obligations that you must meet in order to comply with the pretreatment regulations:

- Obtaining a copy of the State and/or local Sewer Use Regulations or ordinance. These are available by contacting your State and/or your local POTW. Determine what requirements apply to your facility.

- Contact the POTW or State to determine whether your facility must obtain a permit. Even if you are not required to obtain a permit, you may be required to obtain approval for your wastewater discharge.

- Meet, at a minimum, the Federal general pretreatment standards (in Section 8.2.1, even if your POTW does not require a permit).

- Verify how and/or how often your wastewater discharge is meeting the effluent limits in your permit (if you have one) and that your facility is not discharging any prohibited pollutants to the POTW. A list of these pollutants can be found under 40 CFR 403.5.

- As required by your wastewater discharge permit (if you have one), conduct monitoring, reporting, and recordkeeping activities for your industrial wastewater discharge. Submit compliance reports continuing monitoring results as required by permit. Maintain records for all samples collected for monitoring activities for at least three years. These records, which should be available for review at any time, must include:

  - ✔ Date, place, method, and time of sampling and the names of the person(s) taking the samples.
  - ✔ Date(s) the laboratory performed the analyses and the analytical methods used.
  - ✔ Laboratory that performed the analyses.
  - ✔ Results of the analyses.

- Notify the State or POTW (as presented in Table 8-4)

  - ✔ Immediately of a discharge of wastewater from your facility that could cause problems to the POTW, including slug loading.
  - ✔ Promptly prior to any substantial change in your wastewater discharge.
  - ✔ Of a hazardous waste discharge from your facility. You are also required to notify State hazardous waste authorities and the EPA Regional Waste Management Division Director.

8.3 SAFE DRINKING WATER ACT (SDWA) UNDERGROUND INJECTION CONTROL (UIC) PROGRAM

The Safe Drinking Water Act (SDWA) authorizes EPA to develop national drinking water standards, and to create a joint Federal-State system to ensure compliance with these standards. The SDWA also directs EPA to protect underground sources of drinking water through the control of underground injection of liquid wastes.

The SDWA Underground Injection Control (UIC) program (40 CFR Parts 144-148) is a permit program which protects underground sources of drinking water by regulating five classes of injection wells:

- ***Class I*** wells discharge below the deepest underground source of drinking water. They are subdivided into industrial and municipal based on their ownership, and into hazardous and nonhazardous based on the nature of the injected waste.

- ***Class II*** wells inject fluids associated with oil and gas production wells.

- ***Class III*** wells inject for the extraction of minerals.

- ***Class IV*** wells inject hazardous waste fluids. (These wells have been banned nationwide since 1985.)

- ***Class V*** wells are any injection wells that do not fit into Classes I through IV.

If your cooperative disposes of wastewater using underground injection wells, you are probably using Class I or Class V. UIC permits include design, operating, inspection, and monitoring requirements. Wells used to inject hazardous wastes must also comply with RCRA corrective action standards in order to be granted a RCRA permit, and must meet applicable RCRA land disposal restriction standards (see Chapter 3). The UIC permit program is primarily State-enforced, since EPA has authorized all but a few States to administer the program. Check with your State for information on program requirements.

8.3.1 More About Class V Wells

Typically, Class V wells are shallow wells which facilitate the movement of a variety of fluids to the area directly below the land surface. Class V

wells include shallow non-hazardous industrial waste injection wells, septic systems, and storm water drainage wells. They also include other assorted wells that have been found in some instances to transfer potentially harmful levels of contaminants into and above underground sources of drinking water. All Class V wells are currently authorized provided they do not endanger underground sources of drinking water and meet certain minimum requirements.

Because EPA has found that some Class V wells pose environmental hazards, EPA is developing a comprehensive strategy to manage the wells. As part of this strategy, EPA will continue to authorize Class V wells, but will aggressively use the authority provided by the current regulations to achieve (1) the closure of Class V wells which may endanger underground sources of drinking water and (2) the proper management of other Class V wells.

How to Comply if You Discharge to a Class V Well

Generally, you are not allowed to discharge industrial wastewater to sumps or septic systems because the septic system has no ability to clean the discharge and it is likely that many pollutants will simply move through the soil to contaminate groundwater (which may provide an important source of drinking water for the community).

- Even if you do not discharge industrial wastewater into a septic system, but are connected to a large septic system that handles waste generated by more than 20 people per day, you must comply with UIC regulations. Contact the State to get more information on the UIC regulations.

- If any amount of hazardous waste is discharged to the septic system, you must immediately notify the EPA Regional Underground Injection Program Division Directors and/or the State Underground Injection Program Director.

8.4 RESOURCES

8.4.1 References

Clean Water Act: Storm Water, HQ AFCEE/CRR-D, Regional Compliance Office, Central Region.

NPDES Permit for Storm Water Associated with Industrial Activities, HQ AFRES Civil Engineering, Fact Sheet, April 1995.

Pollution Prevention at Publicly-Owned Treatment Works: Case Studies, U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics, 742-F-94-001, Winter 1994.

Storm and Combined Sewer Pollution Control: A Compilation of Significant References, U.S. Environmental Protection Agency, Office of Water Enforcement and Permits, EPA/600/9-91/012, May 1991.

8.4.2 Internet Resources

For further information relating to Rural Electric Cooperatives, please refer to *America's Cooperative Electric Utilities* website at http://www.nreca.org/coops/elecoop3.html and *University of Wisconsin Center for Cooperatives'* website at http://www.wisc.edu/uwwc/.

For further information relating to Storm Water Regulations, please refer to Pro-Act Fact Sheets: *An Overview of Storm Water Regulations* at http://www.afcee.brooks.af.mil/PRO_ACT/main/fact/fact/sept1995/09_95_2.htm, *Storm Water Pollution Prevention Plans* at http:www.afcee.brooks.af.mil/pro_act/main/fact/fact/sept1995/09_95_5.HTM, and the EPA/OWM Home page at http://www.epa.gov/ow-owm.html/.

For further information regarding Underground Injection Control program, please refer to *EPA Region 10's UIC Fact Sheet* at http://www.epa.gov/r10earth/offices/water/uicfaq.htm.

For further information regarding wastewater discharges, please refer to *Wastewater Discharge Regulations* at http://www.halcyon.com/cleanh2o/ww/limits.html, Michigan Environmental Law Resource website entitled *Regulation of Water Discharges* at http://www.wnj.com/environmental/watdis2.htm, and the EPA/OWM Homepage at http://www.epa.gov/ow-owm.html/.

8.4.3 Hotlines

EPA's Office of Water, at (202) 260-5700, will direct callers with questions about the CWA to the appropriate EPA office. EPA also maintains a bibliographic database of Office of Water publications which can be accessed through the Ground Water and Drinking Water resource center, at (202) 260-7786.

EPA's Safe Drinking Water Hotline, at (800) 426-4791, answers questions pertaining to SDWA standards. The Hotline operates from 9:00am through 5:30 pm, EST.

8.4.4 State and Territory NPDES Program Status

State	Approved State NPDES Permit Program	Approved to Regulate Federal Facilities	Approved State Pretreatment Program	Approved General Permits Program (Storm Water)
Alabama	10/19/97	10/19/97	10/19/97	06/26/97
Arkansas	11/01/86	11/01/86	11/01/86	11/01/86
California	05/14/73	05/05/78	09/22/89	09/22/89
Colorado	03/27/75	--	--	03/04/97
Connecticut	09/26/73	01/09/89	06/03/81	03/10/92
Delaware	04/01/74	--	--	10/23/92
Florida	05/01/95	--	05/01/95	05/01/95
Georgia	06/28/74	12/08/80	03/12/81	01/28/91
Hawaii	01/28/74	06/01/79	08/12/83	09/30/91
Illinois	10/23/77	09/20/79	--	01/04/84
Indiana	01/01/75	12/09/78	--	04/02/91
Iowa	08/10/78	08/10/78	06/03/81	08/12/92
Kansas	06/28/74	08/28/85	--	11/24/93
Kentucky	09/30/83	09/30/83	09/30/83	09/30/83
Louisiana	08/27/96	08/27/96	08/27/96	08/27/96
Maryland	09/05/74	11/10/87	09/30/85	09/30/91
Michigan	10/17/73	12/09/78	04/16/85	11/29/93
Minnesota	06/30/74	12/09/78	07/16/79	12/15/87

State	Approved State NPDES Permit Program	Approved to Regulate Federal Facilities	Approved State Pretreatment Program	Approved General Permits Program (Storm Water)
Mississippi	05/01/74	01/28/83	05/13/82	09/27/91
Missouri	10/30/74	06/26/79	06/03/81	12/12/85
Montana	06/10/74	06/23/81	--	04/29/83
Nebraska	06/12/74	11/02/79	09/07/84	07/20/89
Nevada	09/19/75	08/31/78	--	07/27/92
New Jersey	04/13/82	04/13/82	04/13/82	04/13/82
New York	10/28/75	06/13/80	--	10/15/92
North Carolina	10/19/75	09/28/84	06/14/82	09/06/91
North Dakota	06/13/75	01/22/90	--	01/22/90
Ohio	03/11/74	01/28/83	07/27/83	08/17/92
Oklahoma	11/19/96	11/19/96	11/19/96	09/11/97
Oregon	09/26/73	03/02/79	03/12/81	02/23/82
Pennsylvania	06/30/78	06/30/78	--	08/02/91
Rhode Island	09/17/84	09/17/84	09/17/84	09/17/84
South Carolina	06/10/75	09/26/80	04/09/82	09/03/92
South Dakota	12/30/93	12/30/93	12/30/93	12/30/93
Tennessee	12/28/77	09/30/86	08/10/83	04/18/91
Utah	07/07/87	07/07/87	07/07/87	07/07/87
Vermont	03/11/74	--	03/16/82	08/26/93
Virgin Islands	06/30/76	--	--	--
Virginia	03/31/75	02/09/82	04/14/89	04/20/91
Washington	11/14/73	--	09/30/86	09/26/89
West Virginia	05/10/82	05/10/82	05/10/82	05/10/82
Wisconsin	02/04/74	11/26/79	12/24/80	12/19/86
Wyoming	01/30/75	05/18/81	--	09/24/91
Total	**43**	**37**	**31**	**42**

9. HOW DO I COMPLY WITH THE DRINKING WATER REGULATIONS?

Types of water supplies regulated by the SDWA

Some rural electric cooperatives rely on their own well or a surface water source to provide drinking water to their employees. However, some cooperatives (or their subsidiaries), provide water not only to their employees but to other businesses or people. If your cooperative does the latter, it may be subject to the requirements (see box) of the Safe Drinking Water Act (SDWA). This chapter will inform you of your responsibilities for compliance with the Federal SDWA regulations affecting your water supply.

APPLICABILITY OF THIS CHAPTER TO YOUR COOPERATIVE

This chapter does not apply to your cooperative if either of the following pertain to your drinking water supply:

- You provide drinking water—only for your employees—from a well or surface water source, and you have fewer than 25 employees,
- You obtain treated drinking water—only for your employees—from a municipal source, and that source is not a subsidiary of your cooperative.

The Safe Drinking Water Act was originally passed by Congress in 1974. It was amended in 1986 and again in 1996. Many components of the SDWA are intended to protect the public health and welfare by specifying treatment, monitoring, and public awareness requirements under the Public Water Supply Supervision (PWSS) program (see Section 9.1). The SDWA also establishes source protection programs which offer you the opportunity to become aware of, and involved in, efforts to protect your drinking water supply. This chapter will inform you of the major requirements under the PWSS program which may affect your system, and will provide descriptions of other SDWA programs which may affect your system, including source protection and funding assistance programs.

9.1 DOES THE PWSS PROGRAM APPLY TO MY COOPERATIVE?

The PWSS program is the means by which EPA regulates public water systems to fulfill the purposes of the SDWA. Under the PWSS program, EPA has established national drinking water regulations that set standards for contaminants in drinking water, and contain monitoring, public notification and recordkeeping requirements. The national drinking water regulations are discussed further in this section.

Definition of a PWS

Your cooperative is a Public Water System (PWS), and is subject to the requirements of the SDWA and the PWSS program if you provide water for human consumption to the public (including employees), and have:

- At least 15 service connections, or
- Regularly serve an average of at least twenty-five individuals daily at least 60 days out of the year.

Requirements under the SDWA vary according to type of PWS. Schedules of when rules become effective, timing and frequency of monitoring, and public notification requirements are specifically tailored to different types of PWSs. The different types of PWSs, and their definitions within SDWA regulations are described below.

- ***Community water system (CWS)***—a PWS that serves at least 15 residential service connections or the same 25 people in their residences for at least 60 days of the year. Examples of community water systems include a large urban water system, or a small system serving a trailer park.
- ***Transient non-community water system (TNC)***—a PWS that serves transient users (i.e., different people/users every day), but amounting to at least 25 people per day. Examples include campgrounds and highway rest-stops.
- ***Non-transient non-community water system (NTNC)***—a PWS that, unlike a CWS, does not service residential populations, but serves the same individuals for at least six months out of the year. Examples include businesses, churches, or schools.

Possible types of systems your REC may be classified as.

Based on the above definitions, a rural electric cooperative supplying water to at least 25 employees (and no other people) is most likely classified as a non-transient non-community water system. However, if your cooperative or a subsidiary supplies water to households with 15 or more service connections or 25 people or more, you are probably a community water system.

Please note that even if the water you supply is originally obtained from another supplier or utility (i.e., is pretreated, stored, or delivered prior to your control) you may still be subject to SDWA requirements. However, if all of the following four criteria (found in 40 CFR 141) apply to your system, the system is not a public water supply:

- The system consists only of distribution and storage facilities (i.e., lacks water collection and treatment facilities).
- The system obtains all of its water from a public water system to which NPDWRs (see below) apply (and is not owned or operated by that regulated system).
- The system sells water to any person.
- The system functions as a carrier conveying passengers in interstate commerce.

9.1.1 The PWSS Program and National Primary and Secondary Drinking Water Regulations

Primary and secondary drinking water regulations

Under the PWSS program, EPA establishes National Primary Drinking Water Regulations (NPDWRs) and National Secondary Drinking Water Regulations (NSDWRs). NPDWRs address contaminants that may affect public health; for example, microbiological contaminants such as legionella, or chemical contaminants such as benzene (carcinogen). NSDWRs are designed to protect the public welfare by addressing aesthetic properties of drinking water (e.g., taste or odor). NPDWRs are enforceable regulations, whereas, NSDWRs are not, unless a State adopts one or all of the NSDWRs into regulation (see Section 9.1.2). For this reason, further discussion focuses on NPDWRs.

What are the NPDWRs?

The NPDWRs are a comprehensive set of regulations that apply to public water systems. The NPDWRs set standards for contaminants in drinking water (i.e. drinking water standards), monitoring requirements for those contaminants, public notification requirements (if the contaminants exceed the allowable limits in the water system), and recordkeeping requirements. The current NPDWRs may be found in 40 CFR 141. Monitoring requirements are discussed further in this section, public notification requirements are discussed in Section 9.1.7

Drinking Water Standards

What are MCLs and MCLGs?

Drinking water standards in the NPDWRS are expressed as maximum contaminant levels (MCLs) or maximum contaminant level goals (MCLGs). An MCLG is

COMPLIANCE REQUIREMENT

The MCL is enforceable and is thereby the limit to which you must comply. MCLGs are non-enforceable health goals.

defined as “the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety” (40 CFR 141.2). An MCL is generally described as the maximum permissible level of a contaminant in drinking water that is delivered to the free flowing outlet of the ultimate user of a public water system.

Alternative to MCL or MCLG

In lieu of an MCL, EPA may specify a treatment technique such as filtration. The latter is done in situations where monitoring for a specific contaminant at a concentration above the MCL or MCLG is not economically or technologically feasible.

MCLs, MCLGs, and treatment techniques contained in the NPDWRs vary with respect to applicability (i.e., according to the type of source water and treatment system you have, and the size of the population served). Requirements for scheduling, monitoring frequency, and public notification also vary with respect to applicability. Some components of the NPDWRs may or may not apply to your system. For reasons of brevity, specific drinking water standards are not presented in this section, and it is recommended that you consult the regulations.

Monitoring Requirements

Monitoring requirements in the NPDWRs were developed for the purpose of determining compliance with MCLs, and also for collecting data on occurrence of unregulated contaminants (also see Section 9.1.3 for future monitoring requirements). Sampling and analytical methods as well as frequency required for monitoring are specified in 40 CFR 140.

SDWA requires EPA to develop a nationwide contam-inant occurrence database.

The 1996 amendments to the SDWA authorized EPA to develop a new database with information on the occurrence of contaminants in public water systems nationwide. The database will be comprised primarily of monitoring data on the occurrence of unregulated contaminants in public water systems, but also may include data for regulated contaminants. In developing the database, EPA will select contaminants for monitoring based on recommendations from the Science Advisory Board and other interested parties. EPA will review and modify the monitoring list on a five-year basis, and will use the database primarily in developing standards and evaluating health risks, as well as possibly for determining compliance.

The SDWA amendments stipulate that monitoring requirements for the new contaminant occurrence database will vary based on system size, source water, and the likelihood of the presence of contaminants.

However, specific details of the monitoring requirements are not likely to be developed until August 1999, when the occurrence database is scheduled to be available. The SDWA amendments also stipulate that the public must be notified of the availability of the monitoring results.

Monitoring requirements to support the database for small systems

Small water systems, serving under 10,000, have not yet been required by EPA to monitor for unregulated contaminants. However, in association with development of the new contaminant occurrence database, small systems may be required to do so in the future. EPA will decide which public water systems will comprise the "representative sample." To facilitate monitoring for unregulated contaminants in small and medium drinking water systems, the SDWA amendments contain requirements for obtaining a representative sample of those systems. Under the new monitoring requirements, you may be required to install treatment or technologies, and conduct monitoring associated with the treatment or new technology. However, EPA must provide the funding for such efforts.

9.1.2 State Primacy/Stringency Requirements

The SDWA regulations are enforced by the EPA, and by States with approved SDWA PWSS programs. Under the SDWA, States apply to EPA to manage and implement the PWSS program. To have an approved program, States must have laws and regulations in place that are at least as stringent as the Federal regulations. States with approved programs are considered to have "primacy." If a State does not have primacy, the EPA Region implements and manages the PWSS program in the State.

In addition to the Federal SDWA regulations, States can also have additional regulations that apply to public drinking water systems. For example, a State may adopt a NSDWR into regulation, thus making it an enforceable provision. As a result, if you supply drinking water, you are likely to be subject to Federal and State requirements. Keep in mind that State requirements can be more stringent; for example, some States define PWSs as having only one service connection. It is recommended that you contact your State drinking water agency to determine whether your State has primacy, and to become familiar with additional requirements.

9.1.3 Future Contaminants to be Regulated (Schedule)

Throughout the next decade, the EPA will be rapidly developing and refining regulations under the SDWA. Table 9-1 provides a current schedule for this activity. An awareness of the forthcoming regulations is crucial for you to successfully manage your water supply into the future.

In this way, you can be better prepared in terms of the technical and financial resources necessary to meet future requirements.

The 1996 amendments to the SDWA significantly altered the schedule for EPA to evaluate new contaminants for regulation. Under the 1986 SDWA, EPA was required to regulate 25 new contaminants every three years. The 1996 requirements replaced this schedule, requiring EPA to determine whether or not to regulate at least five of the contaminants listed as potential contaminants for regulation. In addition to this contaminant selection schedule, the SDWA contains specific provisions for EPA to develop standards for various contaminants. These contaminants and the schedule for regulatory development are listed in Table 9-1.

The list of future regulations provided in Table 9-1 is intended to provide a general idea of the types of requirements which may apply to your PWS. Any future regulations are subject to modifications inherent in the rulemaking process. For more detail on the requirements, it is recommended that you call the SDWA hotline at 1-800-426-4791.

USEFUL TIP

As a PWS, your cooperative should be aware that in addition to the forthcoming regulations listed in the table below, EPA may, at any time, establish an interim NPDWR in response to an urgent threat to public health. Interim NPDWRs are to be revised or finalized 5 years after being established.

9.1.4 How Does EPA Develop Standards and Regulations?

When EPA develops new regulations, it must follow specific procedures which allow for input from the public and regulated community. A potential new regulation is first published as a "proposed rule" in the *Federal Register*. A public comment period follows the publication of a proposed rule. During the public comment period you may express your concerns about the proposed rule and provide input. Prior to finalizing a rule, EPA must address your comments. By taking advantage of available information and the opportunity for public comment, your cooperative can be an informed participant in upcomming drinking water standards development and rulemaking.

Criteria for deciding to regulate a contaminant

EPA must base a decision on whether or not to regulate a contaminant (i.e., establish standards, and monitoring, notification, and recordkeeping

Table 9-1. EPA Schedule for Regulating New Contaminants

Contaminant or Regulation	Regulatory Action	Scheduled Release Date
Arsenic	Develop a Health Effects Study Plan	February 1997
	Proposed Arsenic NPDWR	January 1, 2000
	Final Arsenic NPDWR	January 1, 2001
Recycling of filter backwash water	EPA must develop regulation for recycling of filter backwash unless it is addressed in the Enhanced Surface Water Treatment Rule (see below)	August 6, 2000
Sulfate	Conduct a dose-response study	February 2, 1999
	Determine whether to regulate	August 6, 2001
Radionuclides	Decide whether to revise NPDWRs for radium and alpha, beta, and photon emitters, and finalize the NPDWR for uranium	November 2000
Radon	Develop health risk reduction and cost analysis for potential MCLs being considered for radon in drinking water.	February 6, 1999
	Propose an MCLG and an NPDWR	August 6, 1999
	Promulgate a Final MCLG and NPDWR	August 6, 2000
Information Collection Rule (ICR)	The ICR was promulgated in May 1996 and consists of a requirements to collect data to establish the Stage II Disinfection/Disinfection By-product Rule and the interim and final ESWTRs. (See 40 CFR 141 for details)	Data available mid 1999 or later.
Disinfection/Dis-infection by-products Rule (Stage I and Stage II)	Promulgate final Stage I (Stage I was proposed in July 1994 and included enhanced coagulation requirements for systems with conventional treatment; MCLs for certain disinfectant by-products, and limits for disinfectants for all systems except transient non-community water systems.)	November 1998
	Notice of availability for Stage II reproposal. (Stage II was proposed in July 1994 and included MCLs made more stringent than the Stage I requirements and established “best available technology” as precursor removal with chlorination)	May 1999
	Promulgate final Stage II	December 2003
Disinfection	Propose a Ground Water Disinfection Rule	December 1998
Enhanced Surface Water Treatment Rule	Promulgate interim ESWTR for systems serving more than 10,000 people	November 1998
	Propose long-term ESWTR for systems serving fewer than 10,000 people and propose possible changes for systems serving more than 10,000 people	May 1999
	Make interim ESWTR effective for systems serving more than 10,000 people	May 2000
	Promulgate long-term ESWTR	November 2000
	Make long-term ESWTR effective for all systems	May 2002
List of 83 contaminants (from 1986 amendments)	Complete regulations for contaminants on list	June 1999

requirements) according to the following criteria: 1) the contaminant would adversely affect human health, 2) there is a high probability of frequent occurrence at significant levels, and 3) the regulation would represent a meaningful opportunity for health risk reduction. Inherent in this process is prioritization based on risk: the contaminants posing the most apparent risk will be addressed first.

EPA must evaluate cost of any new regulations

To decide whether or not to regulate specific contaminants, EPA will use current drinking water data and "best available peer-reviewed science and supporting studies" in conjunction with the three criteria discussed above. In addition, SDWA 1996 Amendment provisions require that prior to issuing any standards, EPA must develop a cost-benefit analysis. Information used in standards setting and cost-benefit analysis must be made available to the public (including the regulated community). By accessing publicly available information, you can educate yourself on the technical basis of the proposed requirements as well as the associated costs they present to your system.

Time frame for compliance with new regulations

Your cooperative generally has three years to comply with any new drinking water regulations, including new standards and monitoring requirements. In some cases, EPA or States may determine that an earlier date for compliance with a new regulation is practicable. If you are making capital improvements to comply with new standards, you may request and obtain a 2-year extension to comply with the standards. If your system serves under 10,000, you may be eligible (subject to State approval) to monitor less frequently than established by EPA if monitoring done at the time of "greatest vulnerability to the contaminant" fails to detect the parameter of concern. However, this kind of "monitoring relief" will not apply to microbiological contaminants or their indicators, disinfectants, or disinfectant or corrosion byproducts.

9.1.5 Small Systems Technology, Variances, and Exemptions

If your cooperative or water system cannot afford to comply with a standard that is based on technology, you may be eligible for a variance. As a result of the 1996 SDWA amendments, EPA will identify and produce a list of alternative technologies that meet the standards and are affordable to each of the following groups of smaller water systems:

- Systems serving a population of 10,000 or fewer, but more than 3,300.
- A population of 3,300 or fewer but more than 500.
- A population of 500 or fewer but more than 25.

If your cooperative or water system still cannot afford any of the proposed alternative technologies, then EPA or the State having primacy will determine whether other changes (e.g., change in source water, restructuring, or connection to another system) could enable you to meet the standard. If these other changes are not practicable, then EPA or the State having primacy will require the most protective technology that your cooperative or water system can afford.

Further relief may be provided to you if your system serves 3,300 persons or less. In this case, you may be allowed an exemption from a standard for up to nine years if you:

- Serve an economically disadvantaged community;
- Are reasonably likely to obtain financial assistance to comply during the exemption term; and
- Cannot comply by alternative water source or by management or restructuring changes.

Note that you will not be eligible for an exemption if you receive a small system variance.

9.1.6 Reporting Requirements

If you are a PWS (see Section 9.1) then you are subject to reporting requirements that include Public Notification and Consumer Awareness requirements. Consumer Awareness and Public Notification requirements are designed to ensure that the public has the opportunity to make informed decisions about drinking water problems. Consumer awareness is addressed mainly in Consumer Confidence Reports, which inform the public of drinking water monitoring results. Public Notification requirements are triggered by violations of MCLs and other NPDWR requirements.

Consumer Confidence Reports

If you are a community water system (see Section 9.1), you will be required to provide Consumer Confidence Reports to the people served by your system. EPA is in the process of developing requirements for all community water systems to prepare and mail to each customer annually, a report with information about the system's source water and the level of contaminants in the drinking water. In some States, relief from the mailing requirements may be allowed for smaller systems. For instance, if your

system serves less than 500 people, you might only be required to give public notice that the report is available, or if your system serves between 500 and 10,000 people, you might be able to publish the report in the newspaper in lieu of mailing. Your State drinking water agency can tell you if these conditions have been allowed by the Governor of your State. EPA Guidelines for Consumer Confidence Report requirements should be finalized by August 6, 1998, at which time you may obtain them from your State drinking water agency or through the SDWA hotline.

Public Notification Requirements

For any violation of an MCL, the regulations stipulate that you must make an initial notification "as soon as possible" and within specific time-frames. The time-frame as well as the method of the notifications depend on the risk posed to human health as a result of the violation. The required method of notification and the time frame for notification will depend on available means of communication (i.e., television, radio, or newspaper) and whether you are a community or non-community water supply.

Violations Posing Acute Risks

The following violations of MCLs pose an acute risk to human health:

- Nitrate;
- Total coliform, when fecal or *E. coli* are present;
- Occurrence of a waterborne disease outbreak in any system; and
- Any violations determined by the State as posing acute risk.

For community water systems the initial notification for MCL violations that pose an acute risk must be provided, via television or radio, within 24 hours.

The requirements for follow-up notifications for violations posing an acute risk are:

- Within 14 days, provide notification through the daily newspaper or weekly newspaper (if no daily).
- Within 45 days, provide notification by mail or hand delivery.

USEFUL TIP

If your State has primacy, it may waive the mail or hand delivery requirement (applies to acute or non-acute violations), provided you have corrected the violation or failure within the 45-day period.

- Once every 3 months for as long as violation continues, provide notification by mail or hand delivery.

If you are a non-community water system, or if you are a community water system in an area not served by a daily or weekly newspaper, then you are allowed some relief in that you may give notice by hand delivery or by continuous posting in conspicuous places, in lieu of the follow-up notifications described above. However, you must begin notification not less than 72 hours after discovering a violation that poses an acute health risk to human health.

Violations That Do Not Pose an Acute Risk

For a violation of an MCL that does not pose an acute risk, or a violation of a treatment technique standard, or failure to comply with a schedule prescribed in a variance or exemption, you must provide notifications according to the following time frames and methods:

- Within 14 days, provide notification by daily newspaper or weekly newspaper (if no daily);
- Within 45 days, provide notification by mail or hand delivery; and
- Once every 3 months for as long as violation continues, provide notification by mail or hand delivery.

USEFUL TIP

If your State has primacy, it may allow you to provide less frequent notification for minor violations (i.e., failure to monitor) or the granting of a variance; however, you must obtain State approval and at a minimum you will be required to provide annual notification.

Minor MCL Violations

You must also provide public notification if you:

- Fail to perform monitoring;
- Fail to comply with test procedures;
- Are subject to a variance; or
- Are subject to an exemption.

For these situations in general, you must provide the following notifications:

- Within 3 months of violation or of granting of variance or exemption, provide notice in daily newspaper or weekly newspaper (if no daily); and

- Once every 3 months for as long as the violation exists or variance/ exemption remains in effect, provide notice in daily newspaper or weekly newspaper (if no daily) **or**, if you are a non-community water system, or if no daily or weekly newspaper exists, you may provide initial and follow-up notices by hand delivery or continuous posting in conspicuous places.

The content of the notifications is lengthy and specific to the parameter of concern. The exact language can be found in 40 CFR 141.32(d) and (e).

9.1.7 Operator Certification Requirements

If your State does not already have water treatment system operator certification requirements, it will be required to develop them in the near future. The 1996 Amendments of the SDWA include a provision for EPA to develop operator certification guidelines by February 6, 1999. State operator certification programs must then meet the minimum EPA requirements established in the guidelines. Note that the intent of the operator certification requirements is not that every operator must be certified, but that your system should have an operator that is able to perform key compliance functions, and is trained and certified to the level required by your specific State program and for your type of system. When complete, the guidelines should be available either through the SDWA hotline, *Federal Register* Notice, or through your State drinking water agency.

9.1.8 Technical, Financial, and Management Capacity of Water Systems

If your cooperative or a subsidiary supplies drinking water to other businesses or residences, your system is not only subject to drinking water standards, but is subject to EPA or State scrutiny of its technical, financial and managerial capacity to supply water that meets specific SDWA standards. As a result of the 1996 amendments, your State, if it does not already do so, will probably require any new community water system and any new non-transient, non-community water systems (commencing operation after October 1, 1999), to demonstrate sufficient technical, managerial and financial capacity to meet drinking water standards. Note that this does not apply to existing systems.

If your State has primacy, it must develop regulations to carry out this mandate by August 6, 2000, otherwise a portion of Federal funds for your State drinking water authority will be withheld. In addition, by this time, your State is required to have established a means of providing assistance to you in strengthening your existing capacities.

9.1.9 Enforcement

Enforcement of SDWA requirements is the responsibility of EPA or the State having primacy. The 1996 SDWA Amendments improve the enforceability of drinking water standards by streamlining the enforcement process for EPA, clarifying "enforceable provisions," and raising penalties and penalty caps. Under the 1996 SDWA Amendments, EPA or your State may impose a penalty to the owner/operator of a public water system as great as $25,000 per day per violation.

USEFUL TIP

For EPA to take any enforcement action against the owner/operator of a public water system in a State that does not have primacy, EPA must first notify an appropriate elected public official.

However, the 1996 Amendments also allow for a public water system to avoid enforcement actions against it by consolidation (physical or managerial), or by transfer of ownership. Under this provision in the amendments, the public water system must submit a plan which outlines specific measures and schedules for consolidation efforts to EPA for approval. If EPA approves the plan, no enforcement action will be taken.

9.1.10 Bottled Water Standards

Currently, bottled water is regulated by the Food and Drug Administration (FDA). The FDA imposes no standards equivalent to MCLs or MCLGs on bottled water, and largely relies on the industry's self-monitoring to ensure public health. This may change as a result of the 1996 amendments to the SDWA. Under the SDWA amendments, EPA will be required to regulate the same contaminants in bottled water that they regulate in public water supplies. In effect, the EPA will have to impose standards on bottled water that are no less stringent than established MCLs, and would include monitoring requirements in those standards. In conjunction with this effort, the SDWA amendments require EPA to develop, by February 1998, a draft Bottled Water Consumer Study, which will address methods of informing consumers of the contents of bottled water. EPA will solicit public comment on the report findings and will issue a final report by February 6, 1999.

9.2 OVERVIEW OF PREVENTION PROGRAMS IN SDWA AMENDMENTS OF 1996, AND APPLICABILITY TO COOPERATIVES

In addition to controlling contaminants in drinking water through development of NPDWRs, SDWA Amendments strengthen the preventative measures for maintaining safe drinking water. If your cooperative or its subsidiary is a public water system, you should be concerned with protecting your water supply source.

Preventative measure requirements are included in such programs as:

- Source water protection programs that are specified in the EPA's Watershed Approach (see Section 9.2.1) and the NPDWR commonly referred to as the Surface Water Treatment Rule (SWTR);
- Sole Source Aquifers program (see Section 9.2.2);
- Wellhead Protection Program (see Section 9.2.3); and
- Underground Injection Control program (see Section 9.2.4).

Of these programs, the Wellhead Protection and Sole Source Aquifer programs provide the most opportunity for you to participate in protection of your water supply. The Underground Injection Control (UIC) program pertains to entities disposing of wastes (discussed in Chapter 8), rather than PWSs. The UIC program may be implemented by your State, but will reflect minimum federal requirements.

9.2.1 Watershed Approach Program

The "Watershed Approach" Program is one of the foremost strategies EPA uses to address water quality issues. The Watershed Approach is a framework for environmental management that focuses public and private sector efforts to address the highest priority problems within watersheds. The program addresses both surface and ground water flow. Watershed protection activities address drinking water supply as well as waste disposal. Pollution sources from all media

USEFUL TIP

You can become familiar with your watershed through the use of EPA's interactive internet web site "Surf your Watershed." This tool will allow you to access maps, information on land use, environmental indicators and a variety of other site-specific information (see Section 9.4, Resources).

(air, soil, water) are covered in the program. To the cooperative that supplies water to its employees or to the public, watershed protection is EPA's broad effort at protecting your drinking water supply source.

9.2.2 Sole Source Aquifer Program

An aquifer is a natural underground layer of porous materials containing some type of liquid (water, oil, etc.) usually capable of yielding a large amount, or supply, of that liquid. Groundwater is water contained in an aquifer. The EPA defines a sole source aquifer as an aquifer which supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer, and these areas have no alternative drinking water sources which could physically, legally, and economically supply all those who depend upon the aquifer for drinking water.

When an aquifer is designated by EPA or the State as a sole source (for drinking water) (see box), no federal activity or activity receiving federal financial assistance may be conducted if the EPA Regional Administrator determines the activity may contaminate the aquifer. What this means to your cooperative, as a public water supply, is that your water source may be afforded extra protection intended to prevent contamination.

USEFUL TIP

EPA will only designate Sole Source Aquifers in response to petitions. Therefore it is up to you to seek this form of protection for your water supply, whether you supply water only for your employees or to others as well.

Submitting a petition for sole source aquifer designation

If your water source is ground water and you believe that it is a sole source, **you can petition the Regional Administrator to make such a designation.** In your petition, you must provide hydrogeologic and drinking water usage data and other technical and administrative information supporting the definition of "sole source aquifer." Detailed information to include in petitions, as well as the procedures and criteria for determining aquifer boundaries may be found in "Sole Source Aquifer Designation Petitioner Guidance," available from EPA Office of Water Resource Center (see Section 9.4). Your state may also have a Sole Source Aquifer program, thus you should check with your drinking water agency to determine the role of such programs with respect to petitions.

The time frame for making a sole source aquifer determination will vary, but generally it takes a minimum of six months following submittal of the petition. EPA reviews the documented information on the boundaries, hydrogeologic materials, and water use patterns of an area's aquifer. EPA summarizes the results of the review in a technical support

document that is made available for public review. Final designations, along with a summary of the basis of decision are noticed in the *Federal Register*.

9.2.3 Wellhead Protection

A wellhead is defined as the physical structure, facility or device at the land surface from or through which groundwater flows or is pumped from subsurface, water-bearing formations. Under the SDWA, Wellhead Protection Programs receive Federal guidance and funding, but are generally administered at the State level. Wellhead Protection is a voluntary, community-based effort to protect groundwater sources of drinking water from all potential sources of contamination. Participation in a Wellhead Protection Program offers an excellent opportunity for your cooperative to collaborate with the community and government.

Wellhead Protection process

The general process of Wellhead Protection includes 1) forming a team consisting of water suppliers, local elected and non-elected officials, businesses, farmers, environmental groups, land developers, and other interested parties; 2) delineating the Wellhead Protection Area (WHPA), 3) identifying all sources of potential contaminants, and 4) selecting management strategies to protect the WHPA. If you would like to initiate a Wellhead Protection Program, EPA offers assistance in the form of guidance materials, which can be obtained from the Office of Water Resource Center (see Section 9.4). In addition, your State may have developed its own guidance or funding assistance programs under the Wellhead Protection Program.

9.2.4 Underground Injection Control Program

The UIC program is intended to protect groundwater supplies from activities which involve emplacement of waste materials into the ground. The UIC program is generally administered by the EPA Region or State. State requirements will vary, but at a minimum must reflect the requirements for waste injection disposal outlined in 40 CFR 144.1.

The types of activities covered by UIC regulations involve five categories of injection of hazardous wastes, or larger-scale emplacement of non-hazardous wastes. The regulations do not address single family waste disposal systems or non-residential sanitary waste disposal systems with a capacity to serve fewer than 20 people per day. Within the UIC program, well injection may be authorized by permit or by rule (an abbreviated approval method). As a public water supply, you will benefit

from the protection of groundwater afforded by regulation of activities posing the greatest potential for groundwater contamination.

9.3 FUNDING AND ADDITIONAL ASSISTANCE FOR WATER INFRASTRUCTURE AND WATERSHEDS

Federal appropriations are made to States having primacy for the purpose of administering the PWSS program. This system is known as the State Revolving Fund (SRF). The State may issue grants for projects designed to achieve compliance, or for prevention programs (e.g. source water protection, capacity development, or operator certification). Grants are issued based on a projects' ability to address the seriousness of health risk, compliance needs (including filtration), and system economic need (calculated on a per-household basis). The SRF may also be used to provide loan subsidies and loan forgiveness to disadvantaged communities. In some cases, States may allocate SRFs to other programs which issue grants, such as the Sole Source Aquifer and Wellhead Protection programs. In addition to State Grants, EPA or other organizations may on occasion award grants to systems under various programs. To find out more about grants and how to obtain them, contact your drinking water permitting agency or the associations listed under Resources (9.4).

9.4 RESOURCES

Your primary resource for drinking water issues should be your State Drinking Water Agency. In addition, your EPA Regional Office can assist you and refer you appropriately. The following list provides other sources of information.

9.4.1 EPA Assistance

EPA Office of Groundwater and Drinking Water (OGWDW)

SDWA Hotline: (800) 426-4791 (Will provide contacts for State or Regional permitting agencies)

Office of Water Resource Center: (202) 260-7786

9.4.2 Regulations

NPDWRs: 40 CFR Part 141
NSDWRs: 40 CFR Part 143

9.4.3 References

Future Directions in Water Quality Regulations, Pontius, F.W., 1997. (Journal AWWA, Vol. 89, Issue 3).

Protecting Local Ground-Water Supplies through Wellhead Protection, 1991. (EPA 570/09/91/007).

Locating Financing for Wellhead Protection, 1989. EPA 440-6-89-001. Office of Ground Water Protection, Office of Water, U.S. Environmental Protection Agency.

Wellhead Protection Programs: Tools for Local Government Governments. April 1989. EPA 440/6-89-002. Office of Ground Water Protection, Office of Water, U.S. Environmental Protection Agency.

EPA documents are available from the OGWDW internet site: http://www.epa.gov.OGWDW/Pubs/08ground.html

List of National Primary Drinking Water Standards (i.e., MCLs and MCLGs): available from EPA through the SDWA Hotline.

Publications also can be obtained from the Office of Water Resource Center.

9.4.4 Internet Sites

Surf Your Watershed: http://www.epa.gov/surf/

EPA Office of Groundwater and Drinking Water
http://www.epa.gov/ogwdw/programs.html

9.4.5 Organizations

The Association of Metropolitan Water Agencies
1717 K Street, NW, Suite 801
Washington, DC 20036
(202) 331-2820

The American Water Works Association
1401 New York Avenue, NW, Suite 640
Washington, DC 20005
(202) 628-8303

10. WHAT WETLANDS AND ENDANGERED SPECIES REGULATIONS APPLY TO RURAL ELECTRIC COOPERATIVE ACTIVITIES?

The development, operation, and maintenance of Rural Electric Cooperative facilities have the potential to impact both aquatic resources (particularly wetlands) and endangered species. Potential impacts to these resources may result from a variety of activities but are primarily associated with construction and maintenance of power lines, and construction of sub stations or other facilities. The impact your cooperative's activities have on aquatic resources (particularly wetlands) and endangered species depends, to a large part, on whether you are dealing with above or below ground power lines and the extent of any new ground disturbance.

Aquatic resources, particularly wetlands, and endangered species are protected by federal legislation and in some areas, state and local regulations also apply. In many cases, before you begin your construction project, you are required to obtain a special permit for impacting aquatic areas, such as wetlands, or endangered species habitat. You need to be familiar with applicable regulations; otherwise, your project could experience unnecessary delays, additional expense, or even a notice of violation. To avoid these problems, consultation with relevant state and federal agencies *early* in the planning process is strongly recommended. The regulatory agencies are available to assist you with planning your project such that impacts to aquatic resources and endangered species are minimized as well as guide you through the permitting process. Adherence to the statutes, coupled with early agency consultation can help your cooperative avoid construction delays and the likelihood that you will find yourself in violation.

USEFUL TIP

Since the regulatory agencies for wetlands and endangered species are often very busy, you should consider hiring an environmental consultant to speed up the regulatory process. Be sure to hire a qualified consultant with local knowledge of the resource, regulations, and agencies.

This chapter is divided into four sections: 1) General Overview of the U.S. Army Corps of Engineers Regulatory Program (Section 10.1); 2) Wetlands (Section 10.2); 3) Endangered Species (Section 10.3); and 4) Resources (Section 10.4). These sections define the respective resources and discuss how to determine if regulations protecting these resources may apply to your activity. Following a definition of the resource in each section, a discussion of necessary permitting and

approvals is included to help you understand the permitting process. Finally, Chapter 10 concludes with a list of additional information resources (Section 10.4) available to help with your questions and permit needs.

10.1 THE ARMY CORPS OF ENGINEERS REGULATORY PROGRAM – GENERAL OVERVIEW

Those portions of the U.S. Army Corps of Engineers (Corps) Regulatory Program which have the potential to involve Rural Electric Cooperative (Cooperative) facilities are administered pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. The Corps regulates dredging and general construction in, over, and under navigable waters of the United States (waters that are, were, or could be used for the transportation of interstate commerce) under Section 10. Therefore, activities such as aerial crossings of rivers and streams require a Corps Section 10 permit. The Corps also regulates the discharge of dredged and fill material into waters of the United States which includes navigable waters of the United States as well as all waters and associated wetlands. Activities such as excavating trenches to bury cable, as well as fill for substations and towers, require a Corps Section 404 permit. The U.S. Environmental Protection Agency's (EPA) authority under Section 404 includes veto power of Corps permits, authority to interpret statutory exemptions and jurisdiction, enforcement actions, and delegating the Section 404 program to the states. As may be seen, a wide range of Cooperative facilities, and activities, may need Corps permits. However, since wetlands and endangered species are areas which have the potential to engender controversy and project delay, particular attention is paid to these resources in the following sections.

10.2 WETLANDS

Wetlands are a subset of "waters of the United States" as defined in the Clean Water Act, Section 404, and in the Code of Federal Regulations (CFR). As provided in 33 CFR Part 328, the Corps regulates the placement of dredge and fill material (see box) into wetlands and other water bodies (i.e., waters of the United States). The Corps regulates wetlands

USEFUL TIP

The definition of "dredge or fill" material may not be obvious. Activities such as burying powerlines under wetlands, moving equipment through wetlands, and dewatering or draining wetlands may be regulated as dredging and filling activities. The best approach is to discuss your project with the local Corps office before beginning work.

by administering the Section 404 Permit Program for activities that impact wetlands.

10.2.1 What Is a Wetland?

Wetland definition

Swamps, marshes, fens, bogs, vernal pools, playas, and prairie potholes are common names for wetlands. Many of these names reflect local or regional conditions and terminology and it is therefore important to note that not all wetlands will be obvious to the untrained observer. For example, an area can appear dry during much of the year and still be classified as a wetland. Consequently, a qualified wetland scientist must be used to identify and delineate wetlands. A knowledgeable consultant will be able to delineate wetlands and, if necessary, assist in the permit application process. The Corps, however, must review all wetland delineations before they become final.

DEFINITION

The legal definition of a wetland is:

"...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." (33 CFR Part 328).

Wetlands often provide habitat for threatened and endangered species as well as a diversity of other plant, wildlife, and fish species. In addition to providing habitat, wetlands serve other functions, including: shoreline stabilization; storage of flood waters; filtration of sediments, nutrients, and toxic chemicals from water; and serve as recharge and discharge areas for ground water. Destruction of wetlands can result in higher downstream water treatment costs and the potential for flood damage increases as wetland acreage diminishes.

10.2.2 How Are Wetlands Identified?

Wetland identification criteria

Since 1991, the Corps has required use of the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) to identify and delineate wetlands within the jurisdiction of Section 404 of the Clean Water Act. Wetland delineations made using this manual are often referred to as "jurisdictional wetlands." The 1987 Manual contains specific methods for determining the presence/absence of the three wetland criteria: hydric soils, hydrophytic vegetation, and wetland hydrology (these are defined below). In general, areas that exhibit all three criteria are considered jurisdictional wetlands and are regulated by the Corps under Section 404. It is important to note, however, that in some cases, "atypical" or

"problem" areas (as defined in the 1987 Manual) may still be classified as jurisdictional wetlands despite the absence of one or more criteria. The following section contains a brief summary of each of the three wetland criteria.

- ***Hydrology***—The most important factor in the formation, and maintenance, of wetlands is water. Water can come from a variety of sources including precipitation, ground water discharge, surface water flow, and tides. Wetlands are often found where water saturates (i.e., water-soaked soil) or inundates (e.g., floods or ponds) soils for an extended period during the plant growing season. Wetland hydrology data is normally derived from observation, direct measurements such as stream gauge data, or ground water monitoring wells.

- ***Soils***—The prolonged presence of water in the soil (a condition typical of many wetlands) reduces the amount of oxygen in the soil. Soils exhibiting characteristics of oxygen depletion, including changes in color and texture, are considered hydric. County soil maps and a list of hydric soils are generally available from your county's U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) office. Nevertheless, proper identification of wetland soils requires digging soil pits and examining the soil profile.

- ***Vegetation***—The amount of water and depth of soil saturation during the growing season limits the species of plants that can grow in wetland areas. Plants that do well in water saturated or inundated wetland soils are known as hydrophytic vegetation. These plants tolerate water-soaked, and oxygen depleted, soils and continue to grow when partially submerged. Plants not adapted to these wet environments will die, or grow poorly, under wetland conditions. The U.S. Fish and Wildlife Service (USFWS) publishes a list of plant species that occur in wetlands and the frequency with which they occur (see Section 10.4).

Identifying Wetlands Using the National Wetland Inventory Maps

The USFWS publishes National Wetland Inventory (NWI) maps for many areas of the country. These maps identifying wetland and deep water habitats are superimposed on U.S. Geological Survey 7½ minute topographic maps. Deep water habitats are permanently flooded areas generally devoid of vegetation and at least 6.6 feet deep. NWI maps are often used in conjunction with other sources of information when

determining the likelihood of wetlands being present on a site. The USFWS produces these maps by examining aerial photographs and conducting follow-up field investigations; however, these maps may miss certain types of jurisdictional wetlands and in some cases the maps include water bodies not under the Corps' jurisdiction. Consequently, NWI maps cannot be used as the only source to determine if your project area contains wetlands. You will still need a qualified wetland scientist to conduct a wetland delineation.

10.2.3 What If My Proposed Project Area Includes Wetlands?

Who needs a Section 404 permit?

Because wetlands and the regulations protecting them are dynamic, it is important to check with the Corps district office even if you think a General Permit (see Section 10.2.4) applies to your activity. To ensure compliance with Section 404, the Corps district office may request submission of a permit application even if your activity may be covered by an existing general permit (see Section 10.2.4).

If your project area includes wetlands, the Corps district office may also suggest that your cooperative retain a consultant to delineate wetland boundaries. In addition to conducting the wetland delineation, some wetland consultants (see Section 10.4) can also help with the permit application process.

USEFUL TIP

Placement of pilings in waters of the United States that does not have or would not have the effect of a discharge of fill material shall not require a Section 404 permit. Placement of pilings for linear projects, such as bridges, elevated walkways, and powerline structures, generally does not have the effect of a discharge of fill material (33 CFR Part 323.3(c)).

10.2.4 What Is a Wetland Permit?

The Corps reviews permit applications pursuant to RHA Section 10 and CWA Section 404, and must determine that the project represents the least environmentally damaging, practicable alternative, and that the project will not be contrary to the public interest. The EPA typically provides the Corps with comments on Section 10 and Section 404 permit applications, and they have veto authority under Section 404. Permits are administered by the Corps as either Individual or General Permits.

Individual Permits

Individual Permits are issued on a case-by-case basis, involve more time and Corps involvement than General Permits, and are commonly required for larger projects. Individual Permits require submission of an application form describing specific aspects of the proposed activity (see box).

USEFUL TIP – WHERE TO GET APPLICATION FORMS

Application forms are available from your local Corps office. As part of the application you are required to submit a detailed description of the proposed activities and locations (including a detailed topographic map), names and addresses of all property owners and lessees whose property adjoins the impacted wetland, information concerning activities already complete, amount of fill material to be placed in wetlands, and information about approvals or denials from other government agencies.

Once the Corps has reviewed the Individual Permit application, they will issue a public notice containing information necessary to evaluate potential impacts to wetlands. Other agencies that can provide comments in response to the public notice include USFWS, National Marine Fisheries Services (NMFS), state and local agencies. Adjacent property owners and the general public may also review and comment in response to the public notice. The Corps will issue, or deny, a permit based upon the aforementioned comments, their own analysis and any required environmental documentation (e.g., an environmental assessment or environmental impact statement). After determining that the project complies with Section 404(b)(1) guidelines, and is not contrary to the public interest, the Corps either issue a permit, or issue a permit with conditions (e.g., requiring wetland mitigation). An overview of the Section 404 Individual Permit process is depicted in Figure 10-1.

General Permits

General Permits may be issued on a state, regional, or nationwide basis, and under certain conditions eliminate the need for an Individual Permit. As is the case with Individual Permits, General Permits are developed in accordance with the same public notice process. General permits are

USEFUL TIP

An example of a Nationwide Permit (one form of General Permits) that might be used by a Cooperative is Nationwide Permit No. 12 which permits the discharge of material for utility line backfill or bedding subject to certain stipulated conditions.

The complete list of Nationwide Permits can be found in 33 CFR Part 330.

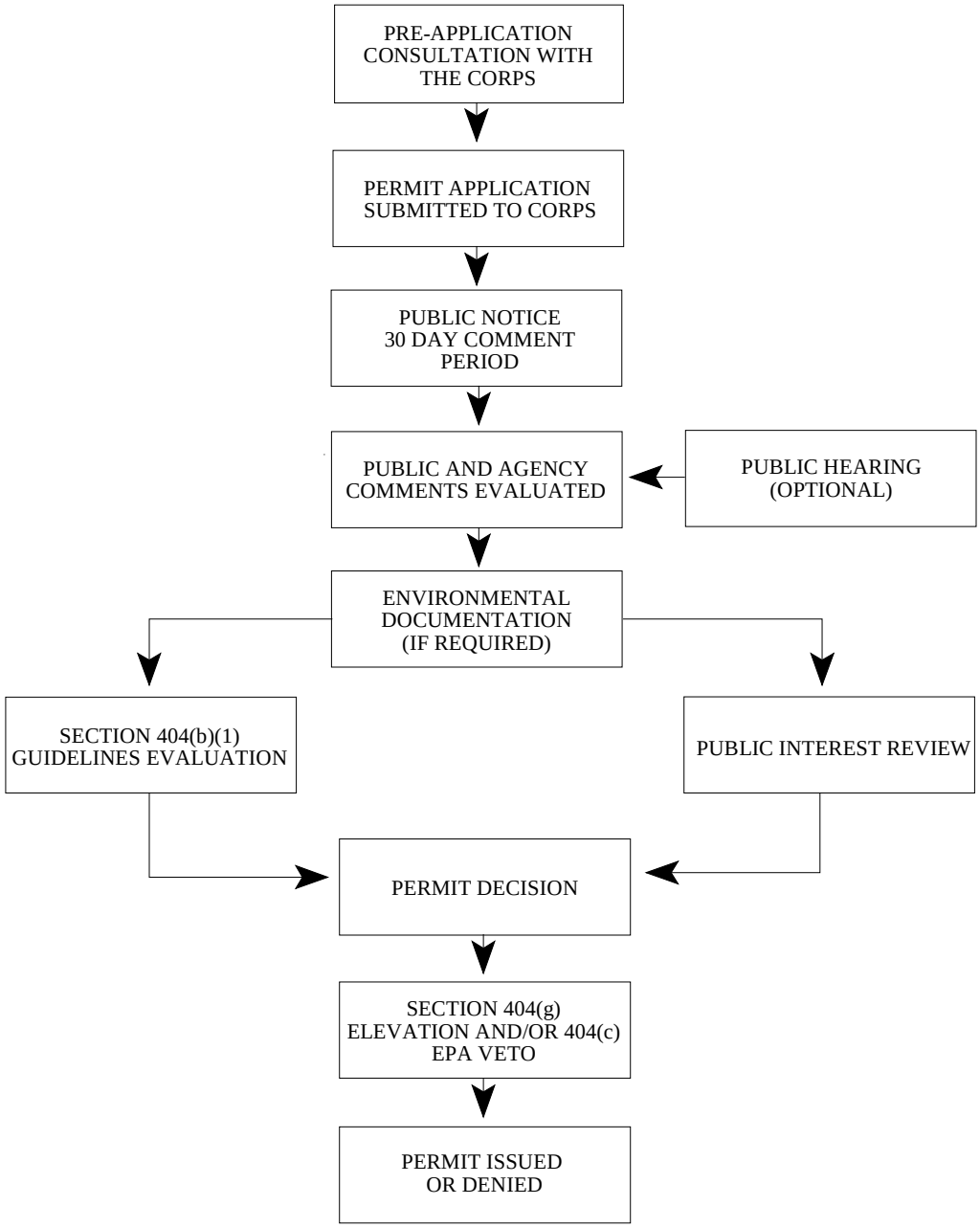

Figure 10-1. Overview of Section 404 Individual Permit Process

issued for a period up to five years provided that the activities covered by the permit are similar in nature and have only minimal impacts (individually and cumulatively) on the environment.

To determine whether your project will require an Individual or General Permit, check with your local Corps office. Your wetland consultant should also be able to give you an idea of which type of permit will be necessary.

10.2.5 Do I Need Other Permits in Addition to the Section 404 Permit?

State/Local Permits

Some state and local governments have laws protecting wetlands. Laws vary from those that authorize states to acquire and preserve wetlands, to those that require permits for construction in wetlands. To find out if your proposed activities require a state permit, contact the appropriate department (e.g., state department of water resources, natural resources, or the environment) in the state where the activities will take place.

USEFUL TIP

Some states or local governments may have stricter wetland regulations than Section 404, so if your activity does not require a Section 404 permit (and involves a wetland) you should still consult with the appropriate state agency .

Permit Conditions and Cross-Cutting Environmental Statutes

Other applicable resolutions

In addition to state and local approvals or permits, each permit may have general project specific conditions which must be adhered to for the permit to be valid. For example, underground utility line projects must ensure that trenching and bedding material do not act as a sub-surface drain and thereby alter wetland hydrology. Other examples of permit conditions for Nationwide Permits (a type of General Permit) include:

- Erosion and Siltation Controls
- Equipment
- Wild and Scenic Rivers
- Tribal Rights
- Water Quality Certification
- Endangered Species
- Historic Properties.

To comply with these conditions your cooperative will need to consider and be familiar with cross-cutting environmental statutes such as the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA). The ESA is discussed in Section 10.3. The NHPA protects historic properties listed or eligible for listing in the National Register of Historic Places. To comply with the NHPA and related regulations protecting historical and cultural resources, you should contact the State Historic Preservation Office (SHPO) in the state you are working prior to any ground disturbance.

USEFUL TIP

Cross-cutting environmental statutes such as ESA, NHPA, and NEPA may trigger the requirement for an environmental report even though your project doesn't impact wetlands. The trigger for these statutes generally consists of some type of federal government involvement such as the requirement for a Corps permit, easements through public lands, and receipt of government loans or other funds.

Another cross-cutting environmental statute that may need to be addressed during the Section 404 permit process is the National Environmental Policy Act (NEPA). Compliance with NEPA is triggered by involvement with public lands or federal funds and requires some type of environmental documentation such as an Environmental Assessment (EA) or Environmental Impact Statement (EIS).

The Corps must prepare an EA for every individual and general permit it issues. An EIS must be prepared by the Corps for individual permits with potential to significantly impact the quality of the human environment. In addition, if your cooperative requires an easement through U.S. Forest Service, Bureau of Land Management, or other public lands, some type of NEPA documentation will be required from the public land management agency. Your cooperative will participate with the agency in development of this documentation. In addition to use of public land, borrowing funds or receiving grants from the federal government for a particular project may also require NEPA documentation.

10.2.6 What Is Wetland Mitigation and Are There Any Wetland Reporting Requirements?

Mitigation Activities

In accordance with Section 404 (b)(1) guidelines, wetlands mitigation is identified as avoidance, minimization, and compensatory mitigation. The Section 404 Program stresses the avoidance of adverse impacts to wetlands with the goal of no overall net loss of wetland functions and values. To comply with this no net loss goal, project applicants are often

required to mitigate for unavoidable impacts. Mitigation generally includes restoration of degraded wetlands, enhancement of existing wetlands, wetlands creation, or, in rare circumstances, wetlands preservation. Mitigation may also require annual monitoring reports and inspections by the Corps to ensure that the mitigation is successfully replacing lost wetland functions and value.

USEFUL TIP

The most important type of wetland mitigation is avoidance. Your Cooperative can probably save considerable time and money if you can avoid impacting wetlands.

Best management practices

Other permit requirements or terms and conditions of receiving a permit include the use of best management practices (BMPs) during the construction phase. Examples of BMPs include avoiding discharges to spawning areas during spawning season and requiring heavy equipment working in wetlands to be placed on mats (for a list of BMPs refer to 33 CFR Part 323.4).

The Corps' interest in your project continues from the permit authorization phase through project completion. Corps employees have the authority to inspect permitted activities to ensure that permit obligations are being met. Additionally, members of the public, and representatives of other government agencies are encouraged to report suspected Corps permit violations (33 CFR Part 326.4).

10.2.7 Evolving Issues

Several issues related to wetland regulations have generated significant discussion among scientists and policy makers. These discussions could result in changes to how wetlands are permitted, delineated, and regulated. The primary evolving issues for this resource include:

- ***Permits***—Nationwide Permits, one type of General Permit (see 10.2.4), were recently reissued and some received significant modifications. For example, Nationwide Permit No. 26 (which covers headwaters and isolated waters discharges, see 33 CFR 330) will be phased out by the end of 1998. Other general permits can also be modified or revoked at the Corps' discretion so it is best to check with your local Corps office to ensure you are in compliance.

- ***Wetland Identification***—Several manuals are available which describe techniques for delineation and identification of wetlands.

The Corps and EPA currently use the 1987 manual. Check with your local Corps office to ensure that your projects are delineated with the proper manual.

- ***Clean Water Act Reauthorization***—Reauthorization, and associated changes to wetland regulations of the Clean Water Act have been discussed for several years but have yet to occur. This is a politically sensitive topic and the best advice is to keep in touch with your local Corps or EPA office.

- ***Tulloch Ruling***—The courts have been going back and forth on the issue of what constitutes "dredged material," so contact the local Corps office to determine the current definition. As of this writing, the "Excavation Rule" at 33 CFR Part 323.2(d) is in effect. Discharge of dredged material is defined as any addition of dredged material into, including any redeposit of dredged material within, the waters of the United States. It does not include the cutting or removal of vegetation above the ground (e.g., mowing, rotary cutting, and chainsawing) where the activity neither substantially disturbs the root system, nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material (see 33 CFR Part 323.2(d)).

Policy issues relating to aquatic resources, particularly wetlands, are time-dependant and continually evolving. Check with your contacts at the outset of any new project to ensure that your cooperative understands, and is in compliance with, the current regulations.

10.3 ENDANGERED SPECIES

ESA Definitions

The Endangered Species Act (ESA) of 1973, as amended, provides for the conservation of federally-listed threatened and endangered (T&E) species of plants, animals and the habitats upon which they depend. The FSA also, among other things, prohibits the unauthorized "taking" of endangered animal species (see box). Endangered species are plants and animals that, without special protection and management, are in danger of becoming extinct. Threatened species are

DEFINITION

"Take" is defined in the Endangered Species Act as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species, or attempt to engage in such conduct. "Harm" may include significant habitat modification where it actually kills or injures a protected animal species by significantly impairing essential behavioral patterns.

likely to become endangered in the foreseeable future. In addition to protecting these species, the ESA protects designated "critical habitat" required for the species' survival and may require consideration of species and critical habitats that have been proposed for listing but are not yet officially listed. The U.S. Department of the Interior, Fish and Wildlife Service (USFWS) and Department of Commerce, National Marine Fisheries Service (NMFS) are responsible for administering the ESA, maintaining the T&E species list, as well as listing new species or removing species from the list when they recover. As a general matter, USFWS is responsible for terrestrial species and NMFS is responsible for marine species.

Rural Electric Cooperative responsibilities under the ESA depend upon whether or not proposed activities occur with federal government involvement. Federal government involvement is triggered when a project seeks to cross public lands (e.g., utility line easement), receive public funds (e.g., loans, grants, cost share), or requires a federal permit (e.g., Section 404 Wetland Permit, see Sections 10.2.3 & 10.2.4). The ESA is a complicated statute and your utility may want to develop a relationship with a qualified consultant familiar with local species, habitats and the ESA who can assist whenever endangered species issues arise.

USEFUL TIP

This section assumes that your project will involve some type of ground disturbance or other activity that could result in a "take" of T&E animal species. Normal operation of your Cooperative, other than powerline collisions and electrocutions of T&E birds, should not result in a "take" situation.

The first part of this section addresses how to determine if T&E species or their designated critical habitat occur on your site. This is followed by a discussion of the ESA consultation process when there is federal involvement in, or control of, the project. A discussion of ESA implementation for non-federal involvement activities is included. Other species of special concern are discussed, and this section concludes with an identification of evolving issues.

10.3.1 How Do I Determine if My Project Has the Potential to Impact Endangered Species or Their Critical Habitat?

USFWS will determine if T&E clearance surveys are needed

To determine if your project may impact federally-listed or proposed T&E species or their critical habitat you should contact the relevant service (i.e., USFWS or NMFS) field office in your area to determine if any T&E species might occur near your proposed activity. Based on their knowledge and use of T&E databases, the service will identify whether any T&E species or critical habitat (see box) could occur in or near your project area. If they indicate that T&E species could occur in or near your project area, one option may be to arrange for a "clearance survey" to be conducted. A clearance survey involves a field survey of the project area to determine if T&E species that could live there, do live there. Clearance surveys should be conducted by a qualified biologist with an in-depth knowledge of local plant and animal species and their habitats.

DEFINITION – CRITICAL HABITAT

"Critical habitat" includes the land, water, and/or airspace that is determined, by the USFWS or NMFS, to be essential for the conservation of T&E species.

If the service does not identify any T&E species or critical habitat in or near your project area, you may still want to contact state or local wildlife agencies; and where appropriate, complete a clearance survey to confirm the presence/absence of any other plant or animal species protected by state or agency regulations. A qualified biologist familiar with federal, state, and agency lists of protected species will be able to help you decide if a clearance survey is necessary.

If the clearance survey finds evidence that T&E species or critical habitat occur or may occur in your project area, and may be negatively affected by the project, potential next steps depend on whether the project has any federal involvement (i.e., federal loans or other funds or use of public lands). Section 10.3.2 looks at ESA permitting with federal participation and Section 10.3.3 discusses permitting for projects with no federal involvement or control.

USEFUL TIP

If the service does not identify any listed or proposed T&E species or critical habitat, and a clearance survey confirms that no T&E or other protected species occur in or near your project area, then your project has sufficiently considered species of special concern.

It should be noted that these are very general descriptions of the ESA process, provided to give your cooperative some background into the

issues. Contact your local USFWS endangered species coordinator or talk with a qualified consultant to clear up any specific questions relating to your cooperative's activities.

10.3.2 Projects With Federal Involvement

USFWS Consultation

For projects with federal involvement (see box), the lead federal agency is responsible for consulting with the USFWS, where appropriate. Requesting a list of any T&E species or critical habitat that may occur in your project area from the USFWS is usually the first step in consultation. If the lead agency or USFWS determines that no T&E species or critical habitat occur in or near your project area, then ESA compliance is not an issue.

USEFUL TIP

The lead federal agency is generally the agency responsible for authorizing, permitting, or funding the proposed action. For example, if your proposed powerline easement crosses Bureau of Land Management (BLM) lands, then BLM would be considered the lead federal agency and they would be responsible for complying with ESA.

Biological Assessments

If the lead agency or USFWS identifies T&E species or critical habitat in or near your project area that may be affected, then the lead federal agency will continue consultation and probably prepare a Biological Assessment (BA) to determine whether the species are likely to be adversely affected by the proposed project. If, based on the BA, the lead agency and USFWS determine that the proposed project is not likely to adversely affect T&E species or critical habitat, then consultation is finished.

If, based on the BA, the lead federal agency or USFWS determines that T&E species are likely to be adversely affected by the proposed project, your cooperative may want to enter into formal consultation. Any activity found likely to jeopardize the continued existence of T&E species or adversely affect critical habitat cannot proceed without implementation of avoidance measures or granting of an ESA exemption. Any "take" incidental to the activity not posing jeopardy will be authorized by the service where measures to minimize take are implemented. A handbook titled "Endangered Species Consultation Handbook" is available from both USFWS and NMFS. Additionally, if informal consultation is not proceeding at a satisfactory pace, your cooperative may want to request formal consultation and its stricter timeline.

10.3.3 Projects Without Federal Involvement

USEFUL TIP

Habitat Conservation Plans allow USFWS to permit "taking" of endangered or threatened species incidental to otherwise lawful activities, provided the taking is minimized and mitigated by conservation measures.

Under Section 10 of the ESA, incidental take permits are generally required when otherwise lawful activities with no federal involvement cause a taking of T&E species. An example would be a privately financed cooperative project on private land, requiring no federal permits. In such a case, after your consultant determines that T&E animal species are present on the site and that the project may cause a "take," you should consider developing a Habitat Conservation Plan (HCP), joining in the development of an HCP already in progress, or participating in an existing HCP. The HCP must accompany your incidental take permit application. The local USFWS endangered species coordinator or a qualified consultant can help with HCP requirements.

Habitat Conservation Plan

The primary purpose of the HCP is to ensure that all practicable monitoring, minimization and mitigation efforts are undertaken to minimize take of listed species. Mitigation measures may include: preservation of existing habitat; enhancement or restoration of degraded or former habitat; creation of buffer zones around existing habitat, modifications of land use practices, and access restrictions.

A complete application for an incidental take permit generally includes the standard application form (available from your local USFWS office) and the HCP. Regulations governing take permits for terrestrial species are outlined in 50 CFR Part 17; and 50 CFR Part 222 and 223 for marine species.

10.3.4 Other Species of Special Concern

USEFUL TIP

"Species of special concern" is often used to identify plant and animal species protected by individual state and agency regulations but not necessarily protected by the ESA.

While the ESA only applies to T&E species listed in 50 CFR Part 17 or species proposed to be listed, and their critical habitat or proposed critical habitat, some state and federal government agencies maintain their own lists of protected species. The list of species protected under the ESA may be redundant with, a subset of, or more extensive than plant and animals species identified for protection by state and other federal agencies. Plant and animal species identified for protection by state or other federal agencies are often referred to as species of special concern (see box).

Consultation with all natural resource agencies with jurisdiction over your project is prudent.

10.3.5 Evolving Issues

Private Landowner Issues

USFWS is developing a "safe harbor" program, whereby incidental take of listed animal species is authorized as an incentive for conservation. Under this program, take is authorized provided the landowner supports species conservation efforts in the near-term, and the species population does not later drop below the level at the time the landowner enters the program should the landowner decide to change land-use practices.

The "No Surprises" policy is another new aspect of endangered species protection on private land. Under this policy, private landowners participating in the ESA through HCP efforts are assured that no new land restrictions or financial compensation will be required for species adequately covered by an approved HCP regardless of unforeseen future circumstances. This means that as long as the landowner make a good faith effort to abide by the approved HCP, the service will provide long-term predictability for your operations.

"Candidate" Species

The USFWS' regular "Notice of Review" presents an updated list of species that are regarded as candidates for possible listing under the ESA. While candidate species receive no statutory protection under the ESA, these species can become listed at any time and familiarity with candidate species in your project area will allow you to both protect them and prevent delays should they become listed. The 1996 Notice of Review contained 182 candidate species. The USFWS endangered species Internet home page (see 10.4.3) provides a list of these candidate species.

10.4 RESOURCES

10.4.1 Bibliography

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

U.S. Fish and Wildlife Service. 1988. *National List of Plant Species that Occur in Wetlands: 1988 National Summary*. Biological Report 88(24), September 1988.

Yocom, T.G., R.A. Leidy, and C.A. Morris. 1989. "Wetlands Protection through Impact Avoidance: A Discussion of the 404(b)(1) Alternatives Analysis." *Wetlands*, Volume 9(2):283-297.

10.4.2 Federal Agency Contacts

U.S. Fish and Wildlife Service
Division of Endangered Species
Mail Stop 452ARLSQ
1849 C Street, NW
Washington, DC 22040
(703) 358-2171

U.S. National Marine Fisheries Service
Office of Operations Management and Information
1315 East-West Highway
M/S SSMC3
Silver Spring, MD 20910
(301) 413-2239

U.S. Environmental Protection Agency
Mail Stop 4502F
401 M Street, SW
Washington, DC 20460
Wetland Hotline: (800) 832-7828

U.S. Army Corps of Engineers
CECW-OR
20 Massachusetts Avenue, NW
Washington, DC 20314
(202) 761-0199

10.4.3 Internet Resources

- Code of Federal Regulations - http://law.house.gov/4.htm
- National Wetlands Inventory - http://www.nwi.fws.gov/
- United States Fish and Wildlife Service - http://www.fws.gov/
- United States Environmental Protection Agency - http://www.epa.gov/
- United States Army Corps of Engineers - http://wetland.usace.mil/
- U.S. Fish and Wildlife Service endangered species home page- http://www.fws.gov/~r9endspp

10.4.4 Professional Organizations

- Society of Wetland Scientists
- Association of State Wetland Managers, Inc.

11. HOW DO I MANAGE AGRICULTURAL HERBICIDES/ PESTICIDES USED AT MY COOPERATIVE?

Many rural electric cooperatives may at some time store, apply (or have applied), and dispose of pesticides. Herbicides can be used to eliminate or inhibit tree and weed growth around power lines and cooperative facilities, while insecticides may be used to control insects at cooperative facilities. Although the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) primarily regulates the manufacture and registration of pesticides, consequences for not complying with FIFRA also exist for pesticide users. The pesticide regulations can be found at 40 CFR Part 150. FIFRA requires that all pesticides be registered for every intended use, and that labels containing instructions for proper storage, use, and disposal accompany each pesticide marketed. Under FIFRA, it is considered illegal to use a pesticide in a manner inconsistent with its labeling. While application and handling of pesticides are product-specific, a cooperative can be held responsible if any pesticides applied on their property is misapplied or mishandled.

This chapter discusses good practices for rural electric cooperatives to ensure that pesticides are not misused. It is divided into two sections, one that discusses considerations for electrical cooperatives that contract out their pesticide applications, and one that discusses considerations for electrical cooperatives that apply their own pesticides. Excess pesticides that must be disposed may, in some cases, be considered hazardous waste, and must be managed accordingly. A discussion of the requirements for managing hazardous wastes and substances are provided in Chapter 3 (wastes) and Chapter 6 (substances).

11.1 WHEN APPLICATION IS CONTRACTED

While some cooperatives may elect to hire a contractor for all of their pesticide applications, all cooperatives may have to contract out pesticide applications at one point or another. Under FIFRA, some pesticides deemed by EPA to have high toxicity or to pose particular environmental hazards may only be applied by certified pesticide applicators. These are referred to as restricted use pesticides (RUPs). Pesticide labels will clearly state whether a particular pesticide is restricted use only. Unless a cooperative chooses to certify

USEFUL TIP

When a pesticide is applied by a contractor, the contractor and the person contracting for the service may be held responsible for pesticide misuse. To avoid hazards to humans or environmental damage, a cooperative should at all times ensure that a pesticide is properly applied.

some employees in pesticide application, applications of restricted use pesticides will require the use of a contractor.

Use best management practices

Your selection of pesticide(s) should be based on the type of pests or weeds to be controlled, and the most environmentally sound applications. Best management practices for pesticide application include selecting pesticides with low mobility or toxicity to protect both humans and the environment, and use of pesticides that target individual pests or weeds. Alternatives should be considered when selecting a pesticide such as those that require the minimum amount of active ingredient to be applied to control a problem.

USEFUL TIP – SELECTING PESTICIDES

Your local agricultural cooperative or extension can provide guidance when selecting the most appropriate pesticide to use. In addition, pesticide labels provide detailed information as to the appropriate use of a pesticide.

Monitor the contractor's work

Cooperatives should always verify that their contractor uses the correct pesticide application rate and method. The pesticide label contains detailed information on appropriate rates and methods of application. The actual application should be observed to ensure that application methods are correct.

Minimize spray drift

One source of environmental contamination from pesticides is drift of liquid or dust pesticides onto areas not intended for application. In addition to possibly contaminating water sources, pesticide spray drift can kill trees, plants, or insects not intended to be treated. Whether the cooperative or a contractor is applying a pesticide, several methods can be used to minimize spray drift. These include:

- Using pesticides formulated in granules or pellets;
- Adjusting spray equipment to optimize droplet size;
- Releasing pesticides as close to the target as possible; and
- Never applying pesticides during windy conditions that increase the chance of pesticides drifting away from the target.

11.2 WHEN THE COOPERATIVE APPLIES PESTICIDES

For pesticides that are not restricted use, your cooperative may purchase, store, apply, and dispose of the pesticides. This section discusses considerations for storage, application, and disposal of pesticides that can be used by rural electric cooperatives, and recordkeeping of those applications.

USEFUL TIP

The most important consideration when dealing with pesticides that you apply yourself is that the label directions must be adhered to at all times.

11.2.1 Pesticide Storage

The EPA has published recommendations for storage of pesticides (U.S. EPA 1991). While these storage procedures are not mandatory, they are recommended as useful guidelines for safe pesticide storage. In addition, storage conditions may be listed on the pesticide label.

USEFUL TIP

The EPA storage guidelines for pesticides provide that, in general, persons in possession of excess pesticides should either store them for future use, or attempt to return them to the manufacturer for relabeling or reprocessing.

Storage site recommend-ations

Storage sites should be chosen to minimize potential environmental impacts. Pesticides should be stored in facilities separate from other chemicals and processes for a cooperative. This minimizes both fire and release hazards. Pesticides should not be stored in areas susceptible to flooding or where the characteristics of the soil at the site allow leaching into ground water. Storage facilities should be dry, well ventilated, and secure. Floors should be made of impermeable materials (e.g., concrete) with curbs and a sump to deal with accidental spills or leaks. Stored pesticides should be well-labeled, segregated (i.e., the same pesticides should be stored together separated from other pesticides), and stored off of the ground. Further precautions include using appropriate warning signs, regular inspection of stored containers for corrosion and leakage, and protective, fire extinguishing, and decontamination equipment kept at the storage site.

11.2.2 Application or Use of Pesticides

> **POLLUTION PREVENTION TIP**
>
> Cooperatives should try to order only the amounts of pesticides needed at the time of application. Manufactures may allow a cooperative to return unused or unopened products.

Amounts to use

FIFRA requires that every pesticide be registered and labeled with both the appropriate application methods and the appropriate amounts to be used in a particular application. To minimize potential environmental impacts, the minimum application rate that is effective should always be used. It is a violation of FIFRA to apply a pesticide in a manner inconsistent with its label. Therefore, a cooperative should carefully read the label of any pesticides used and use the amounts specified by the label. Section 2(ee) of FIFRA does allow for some variances to the label requirements.

Use of mixing pads

Pesticide application includes mixing and application of the pesticide. Mixing should be conducted at a mixing site where structures exist to contain any spills. These structures can be permanent, as in a concrete mixing pad with curbs, or temporary, as in portable plastic pads. Temporary pads can be used to minimize spills if pesticides are mixed at the application site. Permanent pads can be covered to minimize pesticide migration in rain or snow that would fall on an uncovered pad.

Mixing pad precautions

Pesticide applicators should prevent flow back into the water source as pesticides are mixed to prevent contamination of the water source. This can be done by keeping hoses above the water line in the mixing tank, maintaining a six-inch air gap between the hose and the sprayer tank, installing anti-backflow devices on all pipes leading to pesticide storage and mixing areas, or using a closed handling system to mix pesticides.

Locating mixing pads

Mixing and loading pads should be located at more than minimum distances away from surface water, wells, fuel tanks, public roads, property lines, water lines, and adjacent buildings. These distances are generally specified by the State, and cooperatives should check with the State before constructing mixing or loading sites.

Worker Protection Standards (WPS)

EPA has issued guidance on pesticide worker protection (EPA, 1994) that specifies additional requirements for training, protective equipment, and posting of warning signs associated with an application. Cooperatives are not subject to these guidelines, but should observe them as pesticides are applied.

11.2.3 Post-application Clean Up and Pesticide Disposal

After pesticides are used, application equipment must be cleaned and empty containers disposed of. Liquid pesticide containers may be triple rinsed and disposed of in municipal solid waste landfills. Dry chemical bags should always be emptied completely. If permitted by the pesticide label, these bags may be burned where the pesticide is applied if that site is far enough away from populated areas. Otherwise, they may be disposed of in a licensed landfill or incinerator (see Chapter 3).

USEFUL TIP

Many applicators are now accepting plastic pesticide containers for recycling, or they may provide reusable containers that can be refilled.

All mixing pads should be cleaned at the end of each application to ensure that pesticides do not migrate from the pad during periods when application is not occurring. The rinse water from the cleaning, if not reused, may be considered hazardous and should be disposed of accordingly (see Chapter 3). Rinsates from equipment, mixing/loading pads, or pesticide containers may be applied to the use area if permitted by the pesticide label. Otherwise, they may be considered hazardous and should be disposed of accordingly (see Chapter 3).

Disposing of unused pesticides depends on the type of pesticide. Organic pesticides (excluding organic mercury, lead, cadmium and arsenic) may be incinerated in pesticide incinerators if permitted by the pesticide label. Metallo-organic pesticides and inorganic pesticides (including organic mercury, lead, cadmium and arsenic) require special treatment to recover heavy metals or deactivate the pesticide residues. If such treatment is unavailable, metallo-organic pesticides may be disposed of in a landfill specially licensed for this purpose. Inorganic pesticides (including organic mercury, lead, cadmium and arsenic) must be encapsulated before disposal at a properly licensed facility.

USEFUL TIP

Be sure to ask the disposal facility you contract with if they are licensed to accept the type of pesticide wastes you are disposing.

11.2.4 Pesticide Use/Applicator Training

Restricted Use Pesticides

As noted in Section 11.1, certain pesticides are classified by the EPA as restricted use based on toxicity or environmental hazard. These pesticides may be applied only be a licensed applicator. EPA sponsors a Pesticide Applicator Training Program that is administered by the States, largely through local extensions or agricultural cooperatives. These local

agencies should be contacted to receive training in pesticide application to become a licensed applicator.

Other Pesticides

Pesticide worker protection standards promulgated by the EPA require that pesticide workers receive training in the proper application of pesticides within five days of entering an area where pesticides are being applied. EPA does not require right-of-way workers to comply with the WPS. However, it is good practice for employees working with pesticides to receive training to ensure that pesticides are applied properly.

11.2.5 Recordkeeping

Best management practices for pesticides include keeping accurate records of use and storage. Records of use are necessary to track when the next application should occur to control weed or pest problems. Frequency of application is determined by label directions. Records of pesticides stored allow for inventory management, so that oldest pesticides can be used first, and so that excess pesticides are not purchased and stored. In addition, accurate recordkeeping for pesticide storage can be crucial in the event of an accidental spill or fire, so that emergency responders can know exactly the hazards posed.

11.3 RESOURCES

Local agricultural extensions (often run through universities) or cooperatives will provide the best source of information on the proper use and storage of pesticides, as well as for training for pesticide application. In some States, a State agency is responsible for the training. In addition, there is the EPA Agriculture Compliance Assistance Center, which can be reached at:

Agriculture Compliance Assistance Center
726 Minnesota Avenue
Kansas City, KS 66101
(913) 551-7207 - phone
(913) 551-7270 - fax
http://es.inel.gov/oeca/ag/aghmpg.html

Additional guidance may be available from the National Pesticide Telecommunication Network at 1-800-858-7378.

11.3.1 References

Markley R.W., 1997. *Kahiltna Pesticide Record Keeping Database*, available at http://www.maine.com/users/rmarkey/agprog.html

U.S. EPA, 1994. *Worker Protection Inspection Guidance*. EPA 722-B-94-002, Office of Prevention, Pesticides and Toxic Substance, January 1994.

U.S. EPA, 1991. *FARMFERT*. Computer software providing guidance on proper handling and storage of pesticides, available at http://www.epa.gov/grtlakes/seahome/farmpest.html

12. HOW DO I COMPLY WITH AIR REGULATIONS?

If you maintain your cooperative's vehicles, service air conditioning units at your cooperative, burn trash, operate emergency diesel generators, or use painting booths, you probably have responsibilities for managing air emissions from these activities, and for obtaining permits to emit certain contaminants as a result of those activities. These requirements are included in the amendments to the Clean Air Act (CAA), passed by Congress in 1990.

DEFINITION – SOURCE

Most federal and state air pollution regulations govern pollutants coming from "sources." A source is defined in the federal rules as any building, structure, facility or installation which emits or may emit any air pollutant.

What are the Clean Air Act Amendments?

The CAA Amendments address seven major areas of air pollution control, often referred to by their section (title) in the Act.

- ***Title I*** establishes stricter air pollution control requirements for geographic areas in the United States which have not attained compliance with National Ambient Air Quality Standards (NAAQS). Areas that are "nonattainment" for one or more of the primary or secondary standards must achieve compliance by the dates specified in the CAA.

- ***Title II*** addresses pollution from mobile sources (i.e., tail-pipe emissions). Included in this title are requirements for the use of reformulated fuels and low emission fleet vehicles in nonattainment areas.

- ***Title III*** deals with the control of air toxics. This title establishes requirements for the emission of 189 hazardous air pollutants (HAPs).

- ***Title IV*** establishes requirements for power plants aimed at controlling acid deposition (acid rain).

- ***Title V*** provides for states to issue federally enforceable operating permits for certain major stationary sources (see the above box for the definition of "source"). The requirements of this title complement state permitting regulations.

- ***Title VI*** deals with use and emission of ozone-depleting compounds. Provisions include acceptability of substitutes, equipment registration, and technician certification.

- ***Title VII*** revises the enforcement provisions of previous CAA amendments. It strengthens penalties and allows USEPA inspectors to issue field citations similar to the issuance of traffic tickets. EPA already has developed many of the regulations required by the Amendments, with additional rules to be added over the next several years.

The federal air pollution regulations developed as a result of the 1990 CAA amendments are found in Subchapter C within Title 40 of the Code of Federal Regulations (40 CFR). The regulations start with Part 50 (40 CFR 50) and currently end at Part 95. Parts 96-99 are empty but reserved for future air pollution regulations. A complete list of the parts in Subchapter C, as well as most of the regulations, can be accessed on the Internet at http://www.epa.gov/docs/epacfr40.

For most of the rules (such as permitting requirements, see Section 12.5), the CAA is set up for states to become the primary agencies for compliance. Additionally, regional, state, county, tribal, and local governments can adopt regulations that are more stringent (e.g., regulating a pollutant at a lower concentration than the federal rules) or broader in scope (e.g., regulating additional pollutants, such as odors). It is important, therefore, to contact these organizations when determining your cooperative's compliance with air regulations.

USEFUL TIP

Make sure that your cooperative is considering federal, state, and local regulations when determining compliance with air pollution rules. Establishing a dialogue with the agencies responsible for these regulations often leads to improved understanding and compliance."

12.1 WHAT ARE THE OPEN BURNING REQUIREMENTS?

Who regulates open burning?

Open burning is not regulated by the CAA. It is up to individual state, county, tribal, and local governments to regulate the open burning of materials, such as brush, garbage, building materials, and tires. Regulations addressing open burning can vary considerably. Many states prohibit the open burning of materials such as garbage, tires, and petroleum wastes, and do

DEFINITION

Open burning usually means the burning of any material in such a way that smoke, ash, and other pollutants are released to the air without passing through a stack, duct, or chimney. "Burn barrels," "burn pits," and trash piles are three common ways that open burning occurs.

not allow burning in order to salvage materials (such as burning wire to remove the insulation prior to recycling the metal). Some states (including New York and New Mexico) allow open burning only after a permit has been obtained. Other states (including Ohio and West Virginia) require notification and approval prior to open burning in some instances. Most states prohibit open burning during declared episodes of high air pollution (smog alerts). Since the rules vary from state to state, and even within different areas of a state, it is a good idea to contact your state and local air pollution authorities prior to doing any open burning.

USEFUL TIP

The burning of wood treated with preservatives, such as creosote, pentachlorphenol, and metals should be avoided. Combustion of treated wood releases pollutants to the air through smoke and to the land through ash.

12.2 AIR TOXICS

Title III of the CAA amendments requires EPA to regulate the emission of 189 hazardous air pollutants (HAPs) (see box). HAPs include many solvents, which are likely to be the most common cause of air emissions for rural electric cooperatives.

USEFUL TIP

The list of HAPs, as well as other useful information on air regulations can be accessed on the Internet at http://www.epa.gov/ttn/uatw. By comparing the ingredients listed on the material safety data sheets (MSDSs) for the materials your cooperative uses, to the list of HAPs, you can determine whether you have HAPs at your site.

Title III of the CAA Amendments also directs EPA to develop standards that require the application of maximum achievable control technology (MACT) to all major sources of HAPs. A "major source" of HAPs is defined as emitting 10 tons annually or more of any individual listed HAP or 25 tons or more annually of any combination of listed HAPs. Although it is unlikely that a non-power-generating cooperative would release these quantities of HAPs, your cooperative should review its operations and determine your emissions levels from all sources (see box for information on making this determination).

USEFUL TIP

One resource that is useful in determining your cooperative's emission levels is the "Compilation of Air Pollutant Emission Factors," commonly referred to as AP-42. AP-42 contains emission factors for various stationary sources (Volume 1) and mobile sources (Volume 2). AP-42 is available online at http://www.epa.gov/ttn/chief.

If your cooperative has emissions of HAPs in excess of the limits (also known as threasholds) listed above, you are considered by EPA to be a "Major Source," and federal regulations require you to have a major source operating permit. These are discussed in Section 12.5.1. Even if your cooperative's emissions do not exceed the federal HAPs limits, your state may have lower emissions limits which, if you exceed, could make you a "Minor Source," and you may be required by your state to obtain a minor source permit. These are discussed in Section 12.5.3. If you review your operations and identify emissions levels in excess of federal or state limits, contact the appropriate air pollution control authority (usually the state environmental protection agency) for compliance requirements.

12.2.1 Are My Cooperative's Degreasing Operations Regulated?

Types of machines

In order to understand which regulations apply to your degreasing operations, it is important to determine which types of solvent cleaning machines are present at your facility. The CAA regulations distinguish between "new" and "existing" solvent cleaning machines. Any solvent cleaning machines that were constructed or reconstructed after November 29, 1993 are defined as new . Machines that were constructed or reconstructed on or before November 29, 1993 are defined as existing. An "existing" solvent cleaning machine may be moved within the same facility or moved to another facility owned by the same cooperative and still be considered existing.

Most solvent cleaning machines are one of two types. Batch cleaning machines process an individual part or set of parts through the entire cleaning cycle before new parts are added. In-line (continuous) cleaning machines use an automated parts handling system to continuously move parts through the cleaning process. Each of these types of machines is further distinguished by physical state of the solvent performing the cleaning. Vapor cleaning machines use the vapors from boiling solvent to perform the cleaning. Cold cleaning machines use liquid solvent in the cleaning process. Cold cleaning machines are further divided into immersion and remote reservoir machines. In immersion cold cleaning machines, parts are completely submerged in the solvent. Remote reservoir cold cleaning machines pump liquid solvent to a "sink-like" work area that drains solvent back into the enclosed solvent reservoir.

The most common types of solvent cleaning machines are remote reservoir and immersion batch cold cleaning machines. Consequently, this document focuses on these machines. In-line and vapor cleaning machines, on the other hand, are not typically used by cooperatives. The regulations governing the design and use of these units are more complex

than those for batch cold solvent cleaning units. If your cooperative has in-line or vapor cleaning machines, contact the USEPA Regional Air Toxics Coordinator for your region. Contacts for each Region can be found under "EPA Programs and Contacts" on the Internet at http://www.epa.gov/ttn/uatw.

USEFUL TIP

Two documents that are useful for complying with regulations covering degreasing operations are "Guidance Document for the Halogenated Solvent Cleaner NESHAP," EPA-453/R-94-081 and National Emission Standards for Halogenated Solvent Cleaning: Summary of Requirements for Implementing the NESHAP, EPA-456/R-96-005]

Solvent emissions from degreasing or parts cleaning operations are one type or category of emissions sources for which the release of HAPs is regulated. The federal rules governing solvent emissions from degreasing operations are found in 40 CFR 63.460. Emissions from your new and existing degreasing operations are subject to federal regulations, if your activities include ***both*** of the following (even if your emissions do not exceed the major source emission thresholds for listed HAPs - see above):

- Your cooperative uses cold (non-boiling) or vapor solvent cleaning machines.
- In those machines, your cooperative uses solutions that contain one or a combination of the following chemicals at concentrations more than five percent, by weight:
  - ✔ Methylene chloride, 75-09-2.
  - ✔ Perchloroethylene (also called "perc" or tetrachloroethylene), 127-18-4 .
  - ✔ Trichloroethylene (also called "tric"), 79-01-6.
  - ✔ 1,1,1-trichloroethane, 71-55-6.
  - ✔ Carbon tetrachloride, 56-23-5.
  - ✔ Chloroform (also known as trichloromethane), 67-66-3.

USEFUL TIP

The number following each chemical name on the left is the Chemical Abstracts Service (CAS) registry number. The CAS registry number is an excellent way to compare chemicals listed on MSDSs to these and other regulated compounds.

How to avoid being regulated

The federal regulations can be avoided by switching to degreasing solutions that do not contain greater than five percent by weight of any individual or combination of these solvents. Check the material safety data sheets for your degreasing solutions for possible replacements, and find out whether those replacements contain the above solvents below the threshold concentrations. When in doubt, call the solvent manufacturer.

State regulation of solvent emissions

Even if the federal regulations do not apply to your degreasing operations, there may be state rules that must be considered. Many states require permits for the installation and operation of solvent cleaning machines (see discussion of minor source permits in Section 12.5.3 - below). The conditions of the permit often include compliance with state counterparts of the federal requirements described in this section.

USEFUL TIP

Many of the commercially available parts washer services (where a company provides the solvent cleaning machine and replaces/replenishes the solvent as a contracted service) have revised formulations that do not contain solvents above federal threshold concentrations identified in this section. Nonetheless, state regulations may require these units to be permitted and operated in specific ways. Contact both the solvent supplier and the state environmental protection agency to discuss the implications of using the service, including any required permits.

Some states may require an individual permit for each unit, while others may allow each unit to be identified in a site-wide permit. It is important to contact the state environmental protection agency to discuss the applicability of state regulations to your cooperative's solvent emissions.

Cold Cleaners

Design require-ments for batch cold solvent cleaning machines

If your cooperative is using an immersion batch cold solvent cleaning machine, the following requirements must be met:

- The machine must have a tight fitting cover that is closed at all times except during entry and removal of the parts to be cleaned.
- There must either be a 1-inch layer of water floating on the surface of the solvent, or the distance from the top of the solvent to the top of the solvent reservoir (also called the freeboard) must be 75 percent or more of the smallest interior dimension of the reservoir (e.g., length, width, or diameter). There are additional requirements for machines using the freeboard approach, which are discussed below.

- A compliance report must be submitted to EPA (within 150 days after startup of a new machine or by May 1, 1998 for an existing machine) that includes the following information:

  ✔ Name and address of the owner or operator.

  ✔ Address (physical location) of the solvent cleaning machine(s).

  ✔ A statement signed by the owner or operator stating that the solvent cleaning machine(s) is in compliance.

  ✔ The compliance approach for each machine.

Work and operational practices in batch cold solvent cleaning machines

If your cooperative is using a remote reservoir batch cold solvent cleaner (where solvent is pumped from a reservoir onto the parts and then drains back into the reservoir via a sump), the unit must have a tight fitting cover over the sump, and the cover must be closed when parts are not being cleaned. The following work and operating procedures for such machines must be followed:

- All waste solvent must be collected and stored in closed containers.

- Any flushing of parts must take place within the freeboard area of the machine.
- Cleaned parts must be drained for 15 seconds or until dripping stops, whichever is longer.

- The solvent level must not exceed the fill line on the unit.

- Spills during solvent transfer must be immediately wiped up, and the spill cleanup material must be stored in a closed container. If the solvent is hazardous, the spill cleanup material may be regulated as a hazardous waste, requiring specific storage and disposal practices. See Chapter 3 for information on hazardous waste management.

- There must not be splashing of solvent when the unit is operating.

- Drafts greater than 132 feet per minute (1½ miles per hour) must not be present when the unit is open.

- Sponges, fabric, wood, or paper products must not be cleaned.

Notification Requirements

Operators of new and existing cold or vapor solvent cleaning machines using any of the above listed solvents must submit an initial notification to EPA. The initial notification for new machines, where construction or reconstruction began after December 2, 1994, is due as soon as possible before starting construction or reconstruction of the machine(s). The initial notification report for existing machines and new machines that commenced construction or reconstruction prior to December 2, 1994 are past due to EPA. The initial notification report for existing machines must include the following:

- Name and address of the owner or operator.
- Address (physical location) of the solvent cleaning machine(s).
- A brief description of the machine(s), including control devices.
- The date of installation (for existing machines).
- The anticipated compliance approach for each machine.
- The estimated annual solvent consumption for each machine.

The initial notification for new machines must include the information listed under the general application requirements of §63.5(d)(1) and the following:

- A description of each solvent cleaning machine, including control devices.
- The anticipated compliance approach for each machine.
- An estimate of annual solvent consumption for each machine.

12.3 WHAT ARE THE REQUIREMENTS FOR OZONE-DEPLETING COMPOUNDS?

EPA has established regulations governing the repair of equipment containing ozone-depleting compounds, including chlorofluorocarbons (CFCs) and hydrochloro-flourocarbons (HCFCs). Cooperatives that service motor vehicle air conditioners (MVACs) and MVAC-like appliances (such as air conditioning units on construction equipment) are subject to

these regulations. The regulations are designed to minimize the release of ozone-depleting compounds and encourage their recycling. They require the following:

USEFUL TIP

Class I and Class II ozone-depleting compounds include those substances recognized by EPA as having the worst effect on the ozone layer. The most current list of these compounds can be accessed on the Internet at http://www.epa.gov/ozone.ods.

- Personnel servicing the equipment must be trained and certified by an EPA-approved certifying organization (contact the Stratospheric Ozone Information Hotline at 800-296-1996 for a current list of certifying organizations).

- Personnel servicing the equipment may not knowingly vent or release any Class I or Class II ozone-depleting compounds (see box) that are being used as refrigerants, including the common automotive refrigerant CFC-12. Class I or Class II ozone-depleting compounds must be recovered or recycled.

- The design of recovery and recycling equipment must be approved by an organization recognized by EPA for this purpose (such as Underwriters Laboratory).

- A "MVAC Recover/Recycle or Recover Equipment Certification Form" must be completed and mailed to EPA at the address listed on the form (forms can be obtained by fax from the Stratospheric Ozone Information Hotline).

Equipment other than MVAC and MVAC-like appliances, such as room and building air conditioners, are subject to similar, but slightly different regulations. If your cooperative performs this type of service, additional information on personnel and equipment requirements can be obtained by contacting the Stratospheric Ozone Information Hotline (800-296-1996).

Section 612 of the CAA requires EPA to establish a program to identify alternatives to Class I and II substances and to publish lists of acceptable and unacceptable substitutes. To date, there are several acceptable alternatives for use as CFC-12 replacements in MVACs. Also, EPA has developed guidance on retrofitting R-12 air conditioning systems to use an alternative refrigerant. For additional information, contact the Stratospheric Ozone Information Hotline.

12.4 HOW ARE ODORS REGULATED

Many municipalities have regulations governing the generation of objectionable odors. These rules typically can be enforced when odors are detected beyond the property line of the responsible organization. Prior to beginning any activities that could cause objectionable odors to extend beyond the site, your cooperative should check with municipal authorities on the existence of any applicable odor regulations. Other approaches to minimize the generation of objectionable odors include:

- Locating any odor-producing activities away from property lines and downwind from nearby residences and businesses.
- Investigating alternative approaches and chemicals that produce less objectionable odors.
- Scheduling odor-producing activities for times when weather conditions limit the spread of objectionable odors.

12.5 AIR PERMITS

USEFUL TIP

The need for air pollution permits and the procedures for obtaining and completing permit applications vary from state to state. The guidance presented in this section is a common-sense approach to the process. It is important to consult with state environmental protection agency personnel starting from the beginning of this process. Guidance provided by them should be used to supplement or replace the information in this section.

The first step in the process of obtaining air permits is to determine whether a permit is even required. Since many states implement their air permit program in lieu of the federal one, and since many states have additional permitting requirements beyond the federal program, it is important to contact the environmental protection agency in the state where your cooperative is located. The state agency personnel can help you identify operations at your facilities that may require permits. It also is important to contact the agency prior to purchasing new equipment to see what permits may be required prior to installing and operating the equipment. The agency also can help you identify and obtain copies of the regulations that may apply to your operation and will send the applicable permit applications.

The second step in the process is to compare the information obtained from the state environmental protection agency to your operations and

determine which operations could require a permit. The type of permit that may be required depends on the activity being (or to be) performed, the potential amount of emissions, and the location of each source. The types of air permits and general criteria for determining the need to receive each type are discussed in the following sections.

12.5.1 Title V Operating Permits

Title V of the CAA Amendments of 1990 established federal operating permit requirements that are typically administered by each state. The Title V operating permits compliment several other federal and state permitting programs for air emission sources. The primary purpose of the Title V operating permits program is to improve implementation and provide clarity to sources regarding their CAA requirements by issuing each source a permit that consolidates all of the CAA requirements into a federally enforceable document.

What are operating permits?

Operating permits specify operating and monitoring requirements, including limits on the emission of air pollutants and operating requirements for pollution control equipment. They often require record-keeping to verify permit compliance. Operating permits typically are in effect from one to five years, until the permitted process changes, or until revoked.

Major sources

The CAA Amendments of 1990 **require major** sources of air pollution to obtain a Title V operating permit from their state (or EPA if the state does not have the authority to issue Title V permits). Major sources include equipment (e.g., diesel generators, paint booths, and degreasers) that have the potential to emit 100 tons/year or more of volatile organic compounds, carbon monoxide, lead, sulfur dioxide, nitrogen dioxide, or particulate matter (PM_{10}). Equipment and processes also can be considered a major source if they emit 10 tons/year or more of any single HAP (see Section 12.2) or 25 tons/year or more of a combination of HAPs. If your cooperative is located in an area that has not attained compliance with National Ambient Air Quality Standards (NAAQS) the threshold limits for major source designation are lower for some pollutants. Your state environmental protection agency should be contacted to determine if your cooperative is located in a “nonattainment” area and what thresholds apply to your activities.

Most rural electric cooperatives that are non-power-generating facilities would not produce enough air emissions to be considered a major source. The regulations, however, use the potential to emit (PTE) in determining whether major source thresholds could be exceeded. Consequently, cooperatives which use emergency generators that have internal

Using emergency generators may trigger require-ments for obtaining a permit

combustion engines to 1 generate electricity from time to time would have to evaluate their potential emissions rate (based upon operation of the equipment 24 hours/day for 365 days/year) to make sure the criteria for a major source cannot be exceeded by using such generators.

How to determine emissions from emergency generators

EPA has developed guidance designed to assist in estimating emissions from gasoline and diesel internal combustion engines. The "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources," commonly referred to as AP-42, provides emissions factors for gasoline and diesel industrial engines and large (more than 600 horsepower) stationary diesel engines. These factors may be used to determine whether major source emission thresholds have been exceeded.

USEFUL TIP

Perform an air emissions inventory of all air pollution sources. Remember, in most cases, the quantity of pollutants that *potentially* can be emitted must be considered. Use AP-42 to help estimate these quantities. AP-42 can be accessed on the Internet at http://www.epa.gov/ttn/chief.

EPA also has provided guidance entitled "Calculating Potential to Emit (PTE) for Emergency Generators," dated September 6, 1995. Through this guidance, EPA has allowed the use of a reduced number of operating hours when calculating potential emissions for generators used solely for emergency purposes (generators used for other purposes, such as peaking generators, are not covered by this guidance.) The guidance can be obtained online at the same address as AP-42 (see above box.)

Other sources requiring operating permits

In addition to major sources, Title V operating permits are required for certain other sources identified in other sections of the CAA. These include sources identified in Sections 111 and 112 of the CAA (which include accidental release rules), affected sources identified in Title IV of the CAA (acid rain rules), and any source in a source category designated by the EPA Administrator. Most distribution cooperatives would not be considered one of these additional sources.

12.5.2 Federal Construction Permits

The CAA regulates construction of major new sources or major modifications of existing sources in nonattainment areas through its New Source Review (NSR) program. Administered by authorized states, the

NSR regulations require companies to obtain an NSR permit prior to the construction of equipment that would increase air emissions in the nonattainment area. If your cooperative is located in a nonattainment area, contact your state environmental protection agency to determine the need for this type of permit.

A parallel program applicable to attainment areas is the Prevention of Significant Deterioration (PSD) program. Certain types of stationary sources that have the potential to emit more than 100 tons per year of any regulated pollutant or any source that emits more than 250 tons per year of any one pollutant could be subject to permitting under the PSD program. Typical rural electric cooperatives would not meet the threshold requirements that trigger these requirements.

12.5.3 Minor Source Permits

Even if an air pollution source is not considered major by federal standards (see above), the owner/operator could still be subject to individual state or local regulations which may be more stringent. Many states require minor source operating and construction permits for sources that emit pollutants above state-set minimum quantities (known as *de minimus* quantities) but below major source thresholds. The *de minimis* quantities and permit requirements vary from state to state and even may be different in different parts of a state. This information typically can be found in the state air pollution regulations.

Categorical and conditional exemptions from air pollution require-ments

Some states require operating permits for specific minor sources such as sand blasting, degreasing, and painting operations, as well as the use of internal combustion engines (natural gas, gasoline, or diesel fueled) for power generation. In addition, many states follow federal guidance and have established “categorical” and “conditional” exemptions from air pollution permit requirements. Categorical exemptions exclude types of equipment or activities from the requirement to obtain permits. One common categorical exemption from permitting requirements applies to internal combustion power generators that are used only for emergency purposes. Conditional exemptions typically exclude equipment and activities that emit *de minimis* quantities of air pollutants. Some states may require your cooperative to document the quantities of pollutants emitted in order to prove eligibility for a conditional exemption.

Sources that are not covered by a categorical exemption and emit air pollutants in excess of state-set *de minimis* quantities may be required to obtain state-issued construction and/or operating permits. Construction permits typically must be obtained prior to construction or modification of any air pollution source regulated by the state (For example, the building

of a painting booth for repainting electrical equipment may require a construction permit prior to the beginning of construction.) A construction permit may contain operating requirements that remain in effect while an operating permit application is progressing through the permitting process. Some states have established unified permit programs that merge construction and operating permits into one application and permit. 40 CFR 70 provides states with the requirements for these “Part 70" operating permits.

12.5.4 Permit Application Process

The keys to compliance with air pollution permitting requirements are knowledge of sources and quantities of air pollution and good communication with the regulatory agency.

As discussed at the beginning of in Section 12.5, the first step in the process of obtaining air permits is to determine whether any of your cooperative’s operations might be subject to federal, state or local permitting regulations. A thorough survey of all operations that emit pollutants to the air should be performed. Once these operations are identified, the applicable regulations and regulatory personnel should be consulted to determine if any categorical exemptions (see 12.5.3) may apply (e.g., an exemption for oil-fired boilers that are below a capacity specified in the state regulations).

Is there a conditional exclusion?

The next step is to determine whether any of the operations potentially subject to permitting meet the criteria for being conditionally exempted (e.g., a diesel generator for which the potential emissions are less than a *de minimis* amount specified in the state regulations). Each state may establish different *de minimis* amounts of air pollutants below which a permit is not required. Depending on the permitting program, some states consider the amount of air pollutants that potentially can be emitted, while others may allow calculations to be based upon actual operating records. This is important if your equipment that is subject to permitting does not operate constantly. Many states have produced or referenced guidance useful for calculating the amounts and concentrations of air pollutants for different types of equipment. (This information, along with equipment specifications, is very useful when preparing an operating permit application.)

Submitting the permit application

If it is determined that the activity is not exempted from permitting regulations, a permit application must be filed with the appropriate agency (usually the state environmental protection agency). ***If your cooperative determines that a permit is required for a currently operating activity, you may be required to cease the activity until the appropriate permit (s) are obtained*.**

USEFUL TIP

40 CFR 70 requires each authorized state to establish a small business assistance program (SBAP) to assist companies with the air pollution permitting process. Contact your state environmental protection agency to locate the SBAP that serves your cooperative. Additional information also is available through EPA's SBAP, which can be accessed on the Internet at http://www.epa.gov/oar/oaqps/sbap.

In some states, each individual activity may require a separate permit, while in other states, several or all activities may be addressed collectively in one permit. Applications and assistance in completing the permit application usually are available from your state agency. Once completed, the permit application(s) must be signed and filed in accordance with the permit regulations.

Typically, if the permit being applied for is for a new source, construction may not begin on the source operation until the construction permit is processed. Also, an operation usually cannot begin until either a construction permit containing operating parameters is approved or an operating permit is approved.

The operating requirements of construction permits usually allow your cooperative to collect air emissions monitoring data during actual operation to be used in support of an operating permit application. These data, along with other required information would then be submitted as part of the operating permit application. If your state issues merged Part 70 operating permits, the process will be different, with the permit specifying monitoring requirements once the activity commences. States often allow operations to continue until the operating permit application is approved or denied.

Modifying and reapproving permits

All operating permits must be periodically reissued. It is important to keep track of your permit and note the dates of its validity. Changes to the permitted activity may require the submittal of a permit modification or reapplication. Working closely with your state environmental protection agency will help ensure compliance with permitting regulations.

12.6 FUELS AND FLEETS

If your cooperative purchases bulk gasoline or diesel fuel and dispenses it into vehicles in a manner similar to a service station, you may be required to change your fuel, change your pump system, and upgrade your fleet. The first step in determining whether your cooperative is subject to these regulations is to find out if your central fueling location is situated in a nonattainment area for ozone. Contact your state environmental protection agency to find this information.

Requirements for fleets in nonattain-ment areas

If your cooperative is in a nonattainment area, the agency should be able to tell you what steps must be taken as outlined in your state's State Implementation Plan. The following are some of the actions your cooperative may have to take:

- Purchase and dispense reformulated (oxygenated) fuels during months when there is a potential for high levels of ozone pollution.

- Install a Stage II gasoline vapor recovery system on gasoline pumps (this may only be required if your cooperative pumps more than 10,000 gallons of gasoline per month.)

- Certify that at least 30 percent (70 percent by the year 2000) of fleet vehicles purchased meet the "Clean Fleet" standards for non-methane organic gas, carbon monoxide, nitrogen oxide, formaldehyde, and particulate matter (this may only be required if your fleet includes 10 or more vehicles.)

12.7 RESOURCES

Contact your state and local environmental protection agencies to determine their authority to enforce federally mandated regulations and to determine what regulations they have adopted that may be more stringent or broader in scope than the federal rules. EPA has established helplines/hotlines to answer questions on federal Clean Air Act regulations. Assistance is available during normal Eastern Time Zone business hours.

- The Stratospheric Ozone Information Hotline answers questions pertaining to the use, recovery, and recycling of ozone-depleting compounds: (800) 296-1996.

- The Clean Air and Technology Center answers questions on air pollution control technologies and can provide assistance with understanding federal air pollution regulations: (919) 541-0800.

In addition, the following Internet web sites may provide useful information:

Name	Address	Information
EPA Home Page	http://www.epa.gov/epahome/	Starting point for a wide range of information on environmental regulations.
Office of Air Quality Planning and Standards	http://www.epa.gov/oar/oaqps	Information on the 1990 Clean Air Act Amendments.
Stratospheric Ozone Protection	http://www.epa.gov/ozone	Information on ozone-depleting compounds (including the list of Class I and Class II compounds)
Technology Transfer Network	http://www.epa.gov/ttn/chief http://www.epa.gov/ttn/uatw	Information and models for estimating air emissions (contains sections of AP-42). Information on air toxics including list of HAPs.
State Environmental Protection Agency Home Pages	(Contact your state environmental protection agency for addresses.)	Many states have posted home pages for their environmental protection agencies that contain useful information on state air pollution regulations.

13. HOW DO I MANAGE ASBESTOS?

Composition of asbestos

The buildings owned by your cooperative may very well contain asbestos or asbestos containing material (ACM). The term asbestos refers to asbestiform varieties of the minerals serpentine, riebeckite, amosite, anthophyllite, tremolite, or actinolite. When processed, these minerals form microscopic fibers that are mixed with other materials to form asbestos containing materials (ACMs). Asbestos and ACMs have been used commonly in a variety of building construction materials for insulation and as a fire-retardant.

As you are probably aware, asbestos is a dangerous and highly regulated substance. EPA and the Consumer Product Safety Commission (CPSC) have banned several products composed of asbestos. Manufacturers also have voluntarily limited uses of asbestos and ACMs. Today, asbestos and ACMs are found most commonly in older buildings, in pipe and furnace insulation materials, asbestos shingles, millboard, textured paints and other coating materials, and floor tiles. Management of asbestos and ACM at your cooperative, according to EPA regulations, is your responsibility.

The goal of this chapter is to provide you with a basic understanding of your asbestos management responsibilities, familiarize you with methods for identifying asbestos and ACM in your facility, and to clarify options for how best to ensure that any ACM are managed properly. It includes sections on:

- The health effects of asbestos
- Regulations governing asbestos
- Methods of identifying asbestos and ACM
- Demolition and renovation activities where ACM is known to be present
- How to identify an asbestos remediation contractor.

13.1 WHAT ARE THE HEALTH EFFECTS OF ASBESTOS?

Exposure to ACM causes asbestos-related health problems in some individuals. Once inhaled, asbestos fibers can easily penetrate body tissues. They may be deposited and retained in the airways and lung tissue. Because asbestos fibers remain in the body, each exposure increases the likelihood of developing an asbestos-related disease. Asbestos related diseases may not appear until years after exposure. Today the results of exposure among asbestos workers during World War II are being identified.

The three most common illnesses associated with asbestos exposure include:

- ***Asbestosis***—A serious, chronic, non-cancerous respiratory disease. Inhaled asbestos fibers aggravate lung tissues, which causes them to scar. Symptoms of asbestosis include shortness of breath and a dry crackling sound in the lungs while inhaling. In its advanced stages, the disease may cause cardiac failure.

- ***Lung Cancer***—Causes the largest number of deaths related to asbestos exposure. The incidence of lung cancer in people who are directly involved in the mining, milling, manufacturing and use of asbestos and its products is much higher than in the general population. The most common symptoms of lung cancer are coughing and a change in breathing. Other symptoms include shortness of breath, persistent chest pains, hoarseness, and anemia.

- ***Mesothelioma***—A rare form of cancer which most often occurs in the thin membrane lining of the lungs, chest, abdomen, and (rarely) heart. About 200 cases are diagnosed each year in the United States. Virtually all cases of mesothelioma are linked with asbestos exposure. Approximately 2 percent of all miners and textile workers who work with asbestos, and 10 percent of all workers who were involved in the manufacture of asbestos-containing gas masks, contract mesothelioma.

13.2 REGULATIONS GOVERNING ASBESTOS

13.2.1 The Clean Air Act

The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (EPA) to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112 of the CAA, EPA established National Emissions Standards for Hazardous Air Pollutants (NESHAPs) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under Section 112. On March 31, 1971, EPA identified asbestos as a hazardous pollutant, and on April 6, 1973, EPA first promulgated the Asbestos NESHAP in 40 CFR Part 61.

The Asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material. Accordingly, the Asbestos NESHAP specifies work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). In

addition, the regulations require the owner of the building and/or the contractor to notify applicable State and local agencies and/or EPA Regional Offices before all demolitions, or before renovations of buildings that contain a certain threshold amount of asbestos.

The Asbestos NESHAP in 40 CFR Part 61, Subpart M addresses demolition and renovation of facilities, and asbestos waste transport and disposal. Asbestos NESHAP regulations must be followed for renovation of facilities with at least 80 linear meters (260 linear feet) of regulated asbestos-containing materials (RACMs) on pipes, 15 square meters (160 square feet) of RACM on other facility components, or at least one cubic meter (35 cubic feet) of facility components where the amount of RACM previously removed from pipes and other facility components could not be measured before stripping.

In summary, the asbestos NESHAPs requires written notification to the local Pollution Control Agency responsible for NESHAP enforcement for all renovations meeting the above criteria, and all demolitions regardless of the amount of asbestos. The asbestos-containing debris from renovations and demolitions must be treated as asbestos-containing waste. The debris must be adequately wetted and bagged for disposal. The debris is then transported in covered vehicles and it must not emit visible emissions to the outside air. The waste must be deposited at an acceptable waste disposal site. State and local agencies which require handling and licensing procedures for landfills can supply a list of "approved" or licensed asbestos disposal sites upon request.

13.2.2 The Asbestos Hazards and Emergency Response Act

In May 1982, the EPA issued the Asbestos-in-Schools Rule. This was the first regulation to control asbestos in schools under the authority of the Toxic Substance Control Act (TSCA). In 1986, the Asbestos Hazard Emergency Response Act (AHERA) was signed into law. AHERA was more inclusive than the 1982 Asbestos-in-Schools Rule. The regulations required under AHERA are found at 40 CFR Part 763, Subpart E.

The Asbestos School Hazard Abatement Re-authorization Act (ASHARA) required EPA to revise its asbestos model accreditation plan to extend training and accreditation requirements to include persons performing certain asbestos-related work in public and commercial buildings. It also increased the minimum number of training hours required for proposed accreditation.

13.2.3 The Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) lists friable asbestos (see Section 13.3) as a hazardous substance with a reportable quantity of one pound (see Chapter 6 for discussion of hazardous substances). Thus, if someone spills one pound of friable asbestos, the spill must be reported to the National Response Center (NRC) within 24 hours (see Chapter 7 for information on spills and releases).

13.3 HOW TO IDENTIFY ASBESTOS AND ACM

Friable versus non-friable ACM

Asbestos can be identified visually, or using a microscope that uses polarized light. In most cases the material you will not be dealing with will not be pure (100%) asbestos, but will contain asbestos. Asbestos-containing material (ACM) is either friable or non-friable. **"Friable ACM"** is any material containing more than one percent asbestos, as determined using the PLM method specified in Appendix A of 40 CFR part 763 section 1, subpart F, and that when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. In contrast, **"non-friable ACM"** is any material containing more than one percent asbestos (as determined by PLM) and that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

The PLM method in Appendix A of 40 CFR 763 involves counting the number of asbestos fibers in a sample of material (i.e., point counting) that is observed under a microscope using polarized light. Since asbestos fibers are typically smaller than the eye can see, their presence in a material must be identified using special microscopes. Asbestos fibers are clearly identifiable from other fibers when observed under a microscope using polarized light.

USEFUL TIP

It should be noted that if the asbestos content of a sample is determined to be less than 10 percent using a method other than point counting by polarized light microscopy, the asbestos content must be verified by point counting using PLM.

Under the Asbestos NESHAP, non-friable ACM is divided into two categories. Category I non-friable ACM are asbestos-containing resilient floor coverings (commonly known as vinyl asbestos tile (VAT)), asphalt roofing products, packings and gaskets. These materials rarely become friable. All other non-friable ACM are considered category II non-friable ACM. (These categories will be discussed in greater detail in Section 13.4.)

Asbestos content can only be determined by testing

An EPA survey identified over 3,000 products that contain asbestos. These products range from spray-applied fireproofing to roof shingles. Because of the wide variety of products containing asbestos, it is almost

impossible to determine its presence without testing. While it is often possible to "suspect" that a material or product contains asbestos by visual determination, actual determinations can only be made by instrumental analysis. Until a product is tested, it is best to assume that the product contains asbestos, unless the label, or the manufacturer verifies that it does not.

13.3.1 What Do I Do if I Have Suspected Asbestos Containing Materials?

If you believe that your facility has ACM, you have a number of management options in how that suspected ACM is managed. These options are dependent on two important factors: 1) What is the condition of the ACM (friable or non-friable)? and 2) What, if anything, will be done with the suspect ACM? In most cases, the best management practice for ACM is to leave it alone. ACM that is not damaged (i.e., flaking, chipping, peeling), poses no health risk. The main concern with ACM, and the majority of regulations covering ACM revolve around demolition, renovation, and construction activities that will disturb ACM.

Asbestos NESHAPs do not require building owners/operators to sample for asbestos. However, owners/operators are responsible for determining if asbestos is present prior to any activity that would disturb any ACM present. If sampling and inspecting is conducted, an accredited inspector must be used. Sampling and inspection of any suspected ACM should be conducted prior to any renovation, construction, or demolition activities. These requirements are discussed in greater detail in Section 13.4, below.

13.4 DEMOLITION AND RENOVATION ACTIVITIES WHERE ASBESTOS IS KNOWN TO BE PRESENT

"Demolition" and "renovation" are defined in the EPA asbestos regulations. You "demolish" a facility when you remove or wreck any load-supporting structural member of that facility or perform any related operations; you also "demolish" a facility when you burn it. You "renovate" a facility when you alter any part of that facility in any other manner. Renovation includes stripping or removing asbestos from the facility.

Asbestos NESHAP work practice requirements must be followed for all renovations of facilities with at least 80 linear meters (260 linear feet) of regulated asbestos-containing materials (RACM) on pipes, or 15 square meters (160 square feet) of RACM on other facility components, or at least one cubic meter (35 cubic feet) of facility components where the amount of RACM previously removed from pipes and other facility components could not be measured before stripping. These amounts are known as the "threshold" amounts.

However, all facilities conducting demolitions must notify the appropriate regulatory agency, even if no asbestos is present at the site, and all demolitions and renovations are “subject” to the Asbestos NESHAP insofar as owners and operators must determine if and how much asbestos is present at the site.

A notification is a written notice of intent to renovate or demolish. Notifications must contain certain specified information, including but not limited to, the scheduled starting and completion date of the work, the location of the site, the names of operators or asbestos removal contractors, methods of removal and the amount of asbestos, and whether the operation is a demolition or renovation. See Section 61.145(b) of the Asbestos NESHAP regulation.

You should notify the delegated State/Local Pollution Control Agency in your area and/or the EPA Regional Office of the demolition or renovation operations subject to NESHAP. Some EPA Regions require that both the EPA Regional Office and the local delegated agency be notified, while some require notice only to the delegated State or local agency. If the program is not delegated, notify the EPA Regional Office.

The NESHAP regulation states that either the owner of the building or operator of the demolition or renovation operation can submit the notification. Usually, the two parties decide together who will notify. If neither provide adequate notice, EPA can hold either or both parties liable.

Category II non-friable materials should be evaluated on a case-by-case basis. If category II non-friable materials are likely to become crushed, pulverized or reduced to powder during demolition or renovation, they should be removed before demolition or renovation begin. For example, A/C (asbestos cement) siding on a building that is going to be demolished with a wrecking ball should be removed, because it is likely that the siding will be pulverized by the wrecking ball.

13.5 USING AN ASBESTOS REMEDIATION CONTRACTOR

When ACM are to be disturbed, an accredited asbestos contractor must be used. EPA has developed core curriculum requirements to ensure that all accredited asbestos contractors understand the dangers posed by asbestos, how to protect themselves and the general public from those dangers, and how to comply with all relevant aspects of the asbestos NESHAP.

Asbestos contractors can be located in the local yellow pages, by contacting the local pollution control agency, or through the State/EPA Regional office. In order to assist companies engaged in asbestos

removals, EPA has developed the National Asbestos Registry System (NARS). NARS is a computerized database established by EPA in April, 1989. NARS stores data on the compliance history of firms doing demolition or renovation work subject to the Asbestos NESHAP.

13.6 RESOURCES

You can obtain more information about the Asbestos NESHAP by contacting your EPA Regional Office's NESHAP coordinator. You can obtain more information about AHERA by contacting your Regional Asbestos Coordinator (RAC).

You may also call the EPA Toxic Substances Control Act (TSCA) Hotline to ask general questions about asbestos, or to request asbestos guidance documents. The Hotline number is (202) 554-1404. The EPA Public Information Center can send you information on EPA regulations. You can reach the Center at (202) 382-2080 or (202) 475-7751.

To obtain a current listing of accredited labs contact the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program at (301) 975-4016.