

US EPA ARCHIVE DOCUMENT

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## 5. HOW DO I COMPLY WITH SAFE DRINKING WATER REGULATIONS?

As a food processing facility, you are responsible for the drinking water supplied to your employees and the water used in food processing operations. The Safe Drinking Water Act (SDWA) protects the water supply through water quality regulations and source protection, such as underground injection control (UIC) regulations. SDWA requirements apply to all public water systems (PWSs). Therefore, it is important that you determine whether you are a PWS, and if so, which SDWA requirements apply to your water system. This section explains the SDWA program and how you can comply with the regulations.

### 5.1 Introduction

The purpose of the SDWA is to protect public health by regulating PWSs and underground injection. EPA is responsible for writing regulations to carry out the provisions of the Act, including drinking water standards, monitoring/reporting, and public notification requirements. The entities that supply public water are responsible for making sure that the water meets EPA's standards.

**SDWA 1996 Amendments.** Since being passed by Congress in 1974, the SDWA has been amended twice, most recently in 1996. The 1996 SDWA Amendments provide:

- (1) **New and stronger approaches to prevent contamination of drinking water.** The Amendments established a strong new emphasis on preventing contamination problems through source water protection, capacity development, and operator certification programs.
- (2) **Better information for consumers, including “right to know.”** The Amendments specify that the public be provided with or given access to data collected, analyses done or implementation strategies developed under new SDWA programs through consumer confidence reports and other provisions for improved consumer information.
- (3) **Regulatory improvements.** Regulatory improvements by EPA include: (a) new risk-based contaminant selection; (b) cost-benefit analysis and research for new standards; (c) small system technologies, variances, and exemptions; (d) extension of compliance time frames; (e) monitoring reforms; and (f) streamlining of enforcement processes.
- (4) **New funding for states and communities through a Drinking Water State Revolving Fund.** One of the most notable features of the new law is the authorization for states to use State Revolving Funds (SRFs) for new prevention programs, such as source water protection, capacity development, and operator certification programs, as well as for the State's overall drinking water program.

For more information on the SDWA and its 1996 Amendments, see EPA's Office of Groundwater and Drinking Water website at <http://www.epa.gov/OGWDWI/>.

**Additional Requirements.** In addition to EPA's SDWA requirements, water used in food processing operations must meet the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) requirements. The FDA, under its good manufacturing practice regulations, requires that "any water that contacts food or food-contact surfaces shall be safe and of adequate sanitary quality" (Current Good Manufacturing Practice in Manufacturing, Packing, or Holding Human Food, 21 CFR Section 110.37). In addition, the USDA's Food Safety and Inspection Service (FSIS) sets standards for activities associated with the production of meat and poultry products, including standards involving water quality, and water use and reuse.

## 5.2 How Does the Program Work?

The federal drinking water program may be delegated to states if they meet requirements in the law and the regulations. This is known as primacy. Fifty-four of 56 states and territories have been delegated primacy to run the drinking water program. EPA sets standards and provides guidance, technical assistance, and some financing to these agencies. EPA has primacy in Wyoming, Washington, D.C., and all Tribal Lands, and may also take enforcement action in a primacy state where the state does not take an enforcement action in response to a violation. The primacy agency, whether EPA or a state, is responsible for tracking sample results, conducting detailed inspections called sanitary surveys, and taking enforcement actions such as imposing fines and penalties when necessary.

## 5.3 How Do I Know If I Am Regulated?

The SDWA regulations apply to you if your facility operates a **public water system (PWS)** or receives water from a PWS and provides treatment to it. Prior to 1996, SDWA defined a PWS as "a system for the provision to the public of **piped water for human consumption** if such system has at least fifteen service connections or regularly serves at least twenty-five individuals." The 1996 Amendments expanded the means of delivering water to include not only pipes, but also **other constructed conveyances**, such as ditches, waterways, flumes, mine drains, and canals. Furthermore, if a **water supplier** provides water to at least twenty-five individuals or fifteen connections at any time on or after August 6, 1998, the supplier is considered a PWS.

Public water systems are divided into three categories:

- **Community water systems.** Generally serve the same people year round (e.g., a small town).
- **Transient non-community systems.** Serve people only for a portion of the time (e.g., hotels, restaurants, or highway rest stops).

- c **Non-transient, non-community systems.** Systems that serve at least 25 people for over six months of the year, but the people generally do not actually live at the facility (e.g., schools or factories).

To understand whether your facility is a PWS, you should know the following information:

- (1) do you or another entity supply the water;
- (2) the number of people served by your system; and
- (3) their pattern of water use.

Your facility is most likely operating a non-transient, non-community water system if your sole source of drinking water is **not** from a municipal or district water supplier.

All PWSs must meet the national primary drinking water regulations (see below). In addition, some states regulate **smaller** facilities than EPA. Contact your state/territory/Tribal government to determine if any additional requirements that apply to your PWS.

*Note: Even if a state/territory/Tribal government does not have primacy for the SDWA program, they may have additional requirements and should be contacted.*

## 5.4 What Are The National Drinking Water Regulations?

Under the SDWA, EPA establishes national primary and secondary drinking water regulations designed to protect the public health and the aesthetic quality of the water.

- c **Primary drinking water regulations** are health-based and enforceable.
- c **Secondary drinking water regulations** are based on the aesthetic quality of the water and are non-enforceable guidelines.

Remember that states have the option to set drinking water standards that are more stringent than those set by EPA. Contact your state regulatory agency to determine if any additional state requirements apply to your water system.

### 5.4.1 National Primary Drinking Water Regulations

#### Maximum Contaminant Levels and Treatment Techniques

EPA has established national primary drinking water regulations (NPDWRs). As part of the NPDWRs, EPA has developed **maximum contaminant levels (MCLs)** and/or **treatment**

**techniques (TTs)** for **more than 80** contaminants, including organics, inorganics, radionuclides, and microbiologicals.

MCLS are drinking water standards that are based on maximum contaminant level goals (MCLGs) and other factors. MCLs are in effect for 72 contaminants. An MCL defines the amount of that contaminant allowed to be present in the drinking water. MCLs are set based on known or anticipated human health effects, and the ability of various technologies to remove the contaminants, their effectiveness, and cost of treatment. MCLs are **enforceable** standards, and therefore, are the levels against which the water samples from regulated systems are judged for compliance with the regulations. To comply with MCLs, your facility may use any state-approved treatment.

When it is not economically or technologically feasible to set an MCL for a contaminant (e.g., when the contaminant cannot be measured easily), EPA may require use of a particular **treatment technique (TT)** instead. A TT is an **enforceable** procedure or level of technological performance that PWSs must follow to ensure control of a contaminant. TTs are set for nine contaminants. The technique specifies the design for part of the drinking water treatment process (such as filtration or corrosion control) to remove these contaminants and prevent health problems. Examples of two TT rules include the following:

- **Lead and Copper Rule.** The Lead and Copper Rule (40 CFR 141, Subpart I) is a set of treatment technique requirements. If you operate a community system or non-transient, non-community water system, you must comply with these requirements. The rule requires all systems which do not meet the specified lead and copper action levels at the tap to optimize corrosion control treatment in an effort to minimize the levels of these contaminants. The rule has five major components: (1) monitoring, (2) distribution system corrosion control, (3) source water treatment, (4) public education, and (5) lead service line replacement. Each of these components can be considerably complex and you should work closely with your primacy state to determine the exact requirements that apply to your system.
- **Surface Water Treatment Rule (SWTR).** The SWTR (40 CFR 141, Subpart H), promulgated in 1989, applies to all PWSs using surfacewater sources or ground water sources under the direct influence of surface water. It includes treatment technique requirements for filtered and unfiltered systems that are intended to protect against the adverse health effects of exposure to *Giardia lamblia*, *Legionella*, as well as many other pathogenic organisms. To comply with the monitoring provisions of SWTR, PWSs must conduct analyses of total coliforms, fecal coliforms, heterotrophic bacteria, turbidity, and temperature, as well as measure residual disinfectant concentrations.

Contact EPA's Safe Drinking Water Hotline at 1-800-426-4791 or see EPA's website at [http://www.epa.gov/ogwd000/methods/swtr\\_tbl.html](http://www.epa.gov/ogwd000/methods/swtr_tbl.html) for more information.

## Monitoring and Reporting

As a supplier of water, you must collect samples from your water system, submit them to an EPA or state-approved laboratory (sometimes known as a

*Some states perform the sampling for the regulated systems in their state. You must contact your state (or other primacy agency) to find out if this applies to your system.*

certified laboratory) for analysis, and send the analytical results to the regulatory agency (usually state or county health department). New PWSs may have to perform initial monitoring more frequently. The type of analysis performed, the sampling frequency, and the location of the sampling point vary from system to system and chemical to chemical. Sampling requirements for all systems can be found in 40 CFR 141.21, 141.22-24, 141.26, 141.35-42, 141.60, 141.74, 141.80, 141.83, and 141.86-88.

Monitoring reports are required to be sent to the regulatory agency (usually state or county health department). These reports must include:

*Note: Waivers may be available from the state to reduce monitoring requirements for some contaminants.*

- C Date, place, and time of sampling and name of the person who collected the sample(s)
- C Identification of the sample (e.g., routine or check sample, raw or treated water)
- C Date of analysis, laboratory conducting analysis, name of person responsible for analysis, and analytical method used
- C Analytical results.

Reporting requirements are found in 40 CFR 141.31-33, 141.35, 141.75, 141.90 and 143.5. If a problem is detected through sampling, there are immediate retesting requirements that go into effect and strict instructions for reporting about the problem.

## Public Notification and Violations

In addition to reporting to the primacy agency, you must notify the public if there is a violation. The timeframes and methods of public notification differ depending on the kind of violation(s) (e.g., those with acute health risk, non-acute health risk, or other kinds) (40 CFR 141.32). Methods of public notification could include one or more of the following:

*EPA is revising public notification regulations and is scheduled to propose them in the Fall 1998.*

direct mail; local newspaper; local radio and/or television; hand delivery; or continuous posting in conspicuous places. **Note: In the event of a violation, you must keep monitoring as required by the rules.**

Violations are divided into two categories: Tier 1 and Tier 2, depending on the seriousness of the violation.

**Tier 1 violations.** Violations of a drinking water standard require prompt notification. (Times vary from "as soon as possible" for acute health hazards to within 45 days for chronic hazards, and are also based on communication mechanisms available to the supplier of drinking water.)

**Tier 2 violations.** Violations related to monitoring, reporting, or recordkeeping must be reported within three months. In addition to notification when there is a violation, **a special one-time notification is required concerning the contaminant lead.** The lead

notification should have been made by June 19, 1988. If you have not made the notification yet, contact your primacy agency for assistance.

### Recordkeeping

If regulated, your food processing facility must maintain certain records for required periods of time. These records and time periods are specified in 40 CFR 141.33, 141.75, 141.80 and 141.91. Depending on the types of records, required time periods range from three (3) to ten (10) years.

## 5.4.2 National Secondary Drinking Water Regulations

National secondary drinking water regulations (NSDWRs) are federal guidelines regarding taste, odor, color, and certain other non-aesthetic effects of drinking water. As part of the NSDWRs, EPA developed secondary MCLs for 15 contaminants. Additional guidelines under the NSDWRs include those for monitoring, analytical methods, and public notification.

These regulations are **not** federally enforceable. EPA recommends them to states as reasonable goals, but federal law does not require public water systems to comply with them. States may however, adopt their own **enforceable** regulations governing these concerns. To be safe, check your state's drinking water regulations and contact your primacy agency.

## 5.5 Underground Injection Control (UIC) Requirements

The SDWA UIC program (40 CFR 144-48) is a permit program designed to protect underground sources of drinking water by regulating the injection of **liquid waste** into five classes (I through V) of injection wells. EPA may delegate enforcement of UIC requirements to primacy states. However, EPA maintains primacy enforcement authority for all wells in 13 states and territories, all Tribal Lands, and for some classes of wells in 7 states.

*Note: Even if a state/territory/Tribal government does not have primacy for the UIC program, they may have additional requirements and should be contacted. In addition, there also may also be local requirements (e.g., county health department, building code requirements, etc.).*

Your facility is subject to these regulations only if it injects liquid waste underground, and only under the following conditions:

- C **Either** your facility maintains a well (or hole) that is deeper than its largest surface dimension, where the principal function of the hole is emplacement of fluids;

## Multimedia Environmental Compliance Guide for Food Processors

- C Or your facility disposes of non-domestic waste/wastewater (such as laboratory waste, industrial waste, storm water) into a subsurface disposal system such as a septic system, drainage well, drywell, or cesspool;
- C Or your septic system or cesspool is used solely for the disposal of sanitary waste and has the capacity to serve more than 20 persons per day.

If your facility meets any one of these criteria, you are required to obtain UIC authorization by permit or by rule from your primacy agency to inject liquid waste. UIC permits include design, operating, inspection, closure, and monitoring requirements. Furthermore, wells used to inject hazardous wastes also must comply with RCRA corrective action standards in order to be granted a RCRA permit, and must meet applicable RCRA land disposal restriction (LDR) standards. See Section 8.0 *How Do I Comply With the Hazardous Waste Regulations?* for more information on LDR standards.

If your facility disposes of liquid waste by injection, it is most likely to a Class V well. These wells are currently authorized by rule, which means they do **not** require a permit if they do not endanger underground sources of drinking water (USDWs) and meet certain minimum requirements. Under the conditions of the UIC regulation, you are required to submit to the primacy agency basic inventory information about the Class V injection well, and ensure that the well is constructed, operated, and closed in a manner which protects USDWs. The primacy agency may request additional information or require a permit in order to ensure groundwater quality is adequately protected. Furthermore, many primacy state programs have additional prohibitions or permitting requirements for certain types of Class V injection wells.

*Class V wells include shallow nonhazardous industrial waste injection wells, septic systems, and storm water drainage wells.*

*If any amount of hazardous waste is discharged to a Class V well, you must immediately notify the your primacy agency.*

On July 29, 1998, EPA **proposed a rule**, 40 CFR Part 144, Subpart G - *Requirements for Owners and Operators of Class V Injection Wells* (63 FR 40586), which focuses on high-risk Class V injection wells in source water protection areas (SWPAs) that are known to pose the greatest threat to USDWs. These high-risk wells include motor vehicle waste disposal wells, industrial waste disposal wells, and large-capacity cesspools. The proposed regulation would affect the owners and operators of these wells in SWPAs delineated for community water systems and non-transient, non-community water systems that rely on at least one groundwater source. For more information, contact EPA's Safe Drinking Water Hotline at 1-800-426-4791.

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## 6. HOW DO I COMPLY WITH AIR REGULATIONS?

### 6.1 Introduction

This section presents an overview of the Clean Air Act (CAA) and a discussion of the common air emissions from food processing facilities. Although total air emissions by the food processing industry typically are less than other manufacturing industries, some sources may emit sufficient air pollution to be regulated under CAA. This section identifies some common types of air emissions produced by food processing facilities; the federal standards that apply to those emissions; how to calculate your facility's total emissions; how to determine whether your facility meets federal thresholds for regulations; and discusses when you need an air permit.

### 6.2 What is the Clean Air Act?

The federal CAA and the Clean Air Act Amendments (CAAA) of 1990 regulate air pollution in the United States. The CAA authorizes EPA to codify rules and regulations that will ensure that the public and the environment will be protected. Although the CAA is a federal law, state and local air pollution control agencies do much of the work in carrying out the act. It is important for you to know all of the applicable federal, state, and local regulations, because in many instances, state and local regulations may be more stringent than the federal regulations and/or include additional requirements.

The CAA and the CAAA of 1990 can be characterized in terms of three programs: (1) air quality regulations; (2) new source performance standards; and (3) specific pollution problems (e.g., hazardous air pollutant emissions).

#### Air Quality Regulations

Pursuant to Title I of the Clean Air Act, EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: ozone, sulfur oxides (SO<sub>x</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), particulate matter (PM), and lead (Pb) (see 40 CFR 50).

**How NAAQS for Criteria Pollutants May Affect Food Processing Industries**  
**SO<sub>2</sub>, NO<sub>x</sub>, and PM** result from the combustion of fossil fuels (e.g., industrial boilers, see Section 6.5.1 Boilers or Steam Generating Units). Some significant sources of **particulate emissions** result mainly from solids handling, solid size reduction, cleaning, roasting, drying, and cooking (e.g., PM<sub>10</sub> results from flour, sugar, and other dry ingredients). Some of the particulates are dusts, but others are produced by the condensation of vapors ranging in the low-micrometer or submicrometer particle-size. **VOC** emissions may result from fryers (e.g., doughnuts, french fries), direct use of ethanol, by-products of yeast fermentation (ethanol), and from lubricating oils for machinery.

Because EPA cannot directly regulate ozone, volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>), which significantly contribute to the formation of ground level ozone, are regulated by EPA. Sulfur oxides are measured in the ambient air as sulfur dioxide (SO<sub>2</sub>).

EPA has developed two types of standards for these criteria pollutants: the **primary standard** protects health, whereas the **secondary standard** is intended to protect environmental and property damage. A geographic area that **meets or does better** than the primary standard is called an **attainment area**; areas that **do not meet** the primary standard are called **nonattainment areas**. Many urban areas are classified as nonattainment for at least one criteria air pollutant. Nonattainment areas are designated further as marginal, moderate, serious, severe, or extreme, depending on the amount of effort needed in the nonattainment area to achieve NAAQS. Failure of a state to meet attainment deadlines results in reclassification of a nonattainment area to the next higher classification with more stringent control requirements.

**New Air Quality Standards for Ozone and Particulates.** In July 1997, EPA promulgated new standards (i.e., NAAQSs) for ozone and particulate matter. As a result of the new standards, additional areas of the country may be designated as nonattainment for ozone and particulate matter. Check with your state and local air pollution control authorities to find out if these new standards affect your facility. For a list of sources and maps of nonattainment areas, refer to the EPA's AIRSWeb site at <http://www.epa.gov/airprogmlairs/web/maps.html>.

**State Implementation Plans.** Under Title I of the CAA, all states must prepare a **state implementation plan (SIP)** for achieving attainment by a specified date (see CAA Section 110, 42 U.S.C. 7410). While EPA promulgates rules and regulations that limit emissions from specific types of facilities and for specific air pollutants, each state must promulgate appropriate rules and regulations through the SIP process, depending on the state's attainment status. EPA must approve each SIP, and if the SIP is not acceptable, EPA can take over enforcing the CAA (e.g., permitting authority) in that state (see CAA Section 110(a)(2), 42 U.S.C. 7410).

*Under Section 110 of the CAA, states are required to implement **new source review (NSR)** provisions for nonattainment areas in their SIPs. Your facility is subject to new source review requirements if you are a new major source or an existing major source with significant modifications to equipment at your facility.*

*A parallel program that applies to attainment areas is the **Prevention of Significant Deterioration (PSD)** which pertains to 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. For more information on these two programs, see Section 6.3.3 Air Pollution Permits.*

Existing sources located in nonattainment areas may be required to install **reasonably available control technology (RACT)**. RACT is defined as "devices, systems, process modifications, or other apparatus or techniques that are reasonably available" in order to obtain attainment status (CAA Section 172). EPA has established RACT guidelines for over 30 major source categories of nonattainment pollutants and has guidelines under development for additional categories. These guidelines are implemented by the states through their SIPs. Although EPA has not prepared RACT guidelines for food processes, such as vinegar generation, a state may develop RACT guidelines or require major sources to prepare their own RACT requirements. Therefore, RACT guidelines may vary greatly from state to state: contact your state permitting authority to find out what RACT guidelines apply to you.

Under the CAAA, existing sources must install RACT for VOCs and NOx. In addition, states with ozone nonattainment areas must revise their SIPs to address various new requirements, including incremental reductions of VOCs.

### New Source Performance Standards (NSPS)

Section 111 of the CAA required EPA to identify categories of new and modified sources that contribute significantly to air pollution and endanger public health or welfare. After identifying approximately 60 source categories (e.g., grain elevators, fossil fuel-fired generators, steam generating units) that are designated by size as well as type of process, EPA established uniform, national emission standards known as **New Source Performance Standards (NSPS)** in 40 CFR 60. See Section 6.5.1 *Boilers or Steam Generating Units* for more information about requirements for fossil fuel-fired generators and steam generators.

These emission standards for categories of major new, modified, or reconstructed sources are based on the **best available control technology (BACT)**. EPA is required to consider economic, energy, and non-air environmental factors in setting NSPS. Note that the NSPS program sets a minimum level of control for new and modified sources of air pollution. More stringent control may be required under either the **prevention of significant deterioration (PSD)** or the nonattainment pre-construction permitting programs. See Section 6.3.3 *Air Pollution Permits* for more information.

**Monitoring, notification, and recordkeeping requirements.** Owners and operators of sources subject to NSPS must meet notification and recordkeeping requirements listed at 40 CFR 60.7. They must also meet all monitoring requirements as presented in 40 CFR 60.13, or the applicable subpart.

### Specific Pollution Problems

In addition to NAAQS and NSPS, the CAA requires EPA to address specific pollutants, known as hazardous air pollutants (HAPs). HAPs, or air toxics, are chemicals that cause serious health and environmental harm. HAPs are released from stationary sources throughout the country and from motor vehicles.

Under Title III of the CAA, EPA established **National Emission Standards for Hazardous Air Pollutants (NESHAP)**. The list of regulated HAPs can be found in Section 112(b)(1) of the CAA. The CAAA further directed EPA to develop a list of sources that emit any of the HAPS and to develop regulations for these categories of sources. To date, EPA has listed 188 hazardous substances and 174 source categories and has developed a schedule for the establishment of emission standards for these sources. EPA is developing these emission standards for both new and existing sources based on **maximum achievable control technology (MACT)**. MACT is defined as the control technology that achieves the maximum degree of HAP emission reductions, taking cost and other factors into account (see CAA 112(b)).

*EPA is developing a few **MACT** standards for the food processing industry, such as controls to reduce acetaldehyde, which is produced as a by-product during the fermentation process in the baker's yeast manufacturing industry.*

**Monitoring, notification, recordkeeping, and reporting requirements.** Notification requirements for NESHAP source categories are listed in 40 CFR 63.9. (Note: EPA is planning to revise the notification requirements.) Monitoring requirements for NESHAP source categories are presented in 40 CFR 63.8 and recordkeeping and reporting requirements are listed in 40 CFR 63.10.

The state in which your food processing facility operates also may regulate HAPs. Check with your state and local air pollution control authorities to find out if additional or more stringent standards for HAPs apply to you.

### 6.3 What Are My Air Emissions and How Do I Manage Them?

Because your facility emits air pollutants, it is important that you comply with air pollution control requirements and find methods for reducing air emissions from your facility in order to protect yourself, your co-workers, and the quality of air in your community. There are several steps you should follow to responsibly manage air emissions from your food processing facility, including:

- U** Identify the products or processes you use that produce air pollutants
- U** Calculate all **actual** and **potential** air emissions that your facility emits (This is important for determining whether you are a major or minor source and what federal, state, and local requirements apply to your facility. See Section 6.3.2 *Determining Whether Your Facility Meets Federal Regulations* for more information.)
- U** Check with your state and local air pollution control offices and determine which requirements apply to your facility
- U** Comply with all applicable regulations, including obtaining the necessary permits. (See Section 6.3.3 *Air Pollution Permits* for more information.)

#### 6.3.1 Identifying and Quantifying Air Emissions

Your food processing facility may be emitting air pollutants (i.e., criteria, HAPs) from both process and ancillary operations, such as refrigeration and steam generation. You should evaluate the processes and ancillary operations at your facility in order to determine the type and amount of pollutants released into the air.

After identifying your facility's air pollutant emissions that are subject to regulation under CAA and state requirements, you are required by the CAA to determine the **actual** amount of air pollutants generated, as well as your facility's **potential to emit** these pollutants. You may need to perform specific calculations to determine your facility's

*Under Section 112 of the CAA, your facility is required for all regulated pollutants to calculate **actual emissions**, as well as your **potential to emit** these pollutants.*

actual and potential air emissions to determine which threshold for regulation your facility meets. See Section 6.3.2 *Determining Whether Your Facility Meets Federal Regulations* for more information.

You can calculate your facility's actual emissions and potential to emit by one of two ways: (1) pollutant by pollutant; or (2) total of all emissions. Calculating emissions for NO<sub>x</sub>, SO<sub>2</sub>, PM generally are done on a pollutant-by-pollutant basis, while total emission calculations for VOCs and HAPs may be done by calculating total pollutant emissions or pollutant-by-pollutant. In order to calculate emissions (actual or potential), you must first determine the following:

- C The source (e.g., boiler, reactor, etc);
- C What the source does to cause an emission (e.g., burn fuel, react);
- C Raw materials or inputs used, and at what rates;
- C The calculation method (e.g., *AP-42 Compilation of Air Pollutant Emission Factors*, stack test, material balance).

**Determining Your Facility's Actual Emissions:** Actual emissions can be determined by the following methods: (1) estimates calculated using published emission factors; (2) stack tests; (3) engineering estimates; or (4) material balance methods. In general, facilities may choose which method to use when calculating actual emissions; however, the method chosen is subject to review and approval by the state.

- C Emission estimates can be calculated using **published emission factors**. Published emission factors are representative values that attempt to relate the quantity of a pollutant released into the atmosphere with the activity associated with the its release. These factors usually are expressed as the weight of pollutant divided by a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., pounds of particulate emitted per 1000 gallons of fuel oil burned). Such factors facilitate estimation of emissions from various sources of air pollution. In most cases, these factors simply are averages of all available data of acceptable quality, and generally are assumed to be representative of long-term averages for all facilities in the source category.

To estimate emissions using published emission factors, use the following general equation:

$$E = A \times EF \times (1 - ER/100)$$

where E = emissions; A = activity rate (e.g., gallons (in thousands) of fuel oil burned per year) EF = emission factor (e.g., pounds of particulate per 1000 gallons of fuel oil burned); and ER = overall emission reduction efficiency (%).

This general equation for estimating emissions and many emission factors are published in EPA's AP-42 document series entitled, *Compilation of Air Pollutant Emission Factors*. AP-42 emission estimates and factors generally are calculated on a pollutant-by-pollutant basis. The extent of completeness and detail of the emissions information in AP-42 depends upon the availability of published references. Emissions from some processes are better documented than others. AP-42 can be found at EPA's Technology Transfer Network (TTN) website at <http://www.epa.gov/ttn/chief/ap42.html>.

- C **Stack tests** can be done to measure short term (e.g., hourly) actual emissions at a maximum production rate. EPA prescribes test methods to measure pollutant emissions, and these are listed in 40 CFR 60, Appendix A. It is likely that your facility is required to do stack testing in order to show compliance with NSPS and NESHAP standards as discussed earlier in this section. Many facilities voluntarily do stack testing if an emission estimate (see below) is not available, or if it is believed that an emission estimate is overestimating your emissions. For example, if AP-42 determines that you are a **major source**, you may want to use stack tests in order to show that your emissions are actually lower than the major source category. By demonstrating that your emissions are too low to be declared a major source, your facility may save time and money spent on permitting fees, pollution control equipment, and other regulatory requirements. See Section 6.3.3 *Air Pollution Permits* for more information.
- C **Engineering estimates** use equipment-specific calculations to determine actual emissions, such as mass transfer calculations, heat transfer calculations, and distillation calculations, among others. This type of emission estimation procedure requires an intimate knowledge of the specific process that generates the emission; the thermodynamic, physical, and chemical properties of the materials involved; and experience in the application of the appropriate calculation equations. The desired results from engineering estimates normally are air pollutant rates per unit time (e.g., lb/hr) emitted from the process or piece of equipment. When using engineering estimates, you can calculate total pollutant emissions or pollutant-by-pollutant.
- C When emission factors are not available and engineering estimates are not practical, the **material balance method** may be used for

### **Compilation of Air Pollutant Emission Factors (AP-42)**

*Dryers, roasters, ovens, and other equipment used by the food processing industries burn natural gas. Emissions from the combustion of natural gas include nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and VOCs, as well as some sulfur dioxide (SO<sub>2</sub>) and particulate matter. **AP42 Natural Gas Combustion** is a good reference for calculating these emissions.*

*Fryers (doughnuts, french fries, corn chips) emit particulate matter and small amounts of VOC from the deep fat frying process. See **AP42 Snack Chip Deep Fat Frying** for calculating these emissions.*

Ethanol is often used to shine jellybeans. To use **material balance method**, subtract the amount of ethanol emitted as VOCs from the amount of ethanol applied initially.

determining your emission rates. The basic concept underlying the material balance method is that the amount of material entering a process (like cooling or preserving) is equal to the amount exiting the process. Therefore, what you purchase as raw material must become part of the finished product, be emitted to the air, released into water, be disposed of as waste, or be accumulated in the inventory. When using the material balance method, you can calculate pollutants by either calculating total emissions, or by calculating pollutant-by-pollutant. This method may be preferable for some businesses that find the options discussed above to be too costly or otherwise impractical.

**Determining Your Facility's Potential to Emit.** A facility's **potential to emit** is defined as the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable (40 CFR 52.21).

To determine your facility's potential emissions, you can use the following calculation:

Potential emissions (lbs/year) = Lesser value of uncontrolled or allowable emission rate at maximum capacity x 8760 hours

Please keep in mind that your **potential to emit** must account for emissions that **could have** come from any unused equipment, even if these emissions were not included when determining the facility's actual emissions. For example, if your facility has a boiler that operates 24 hours a day for only 300 days a year, you still must calculate your **potential to emit** on the assumption that your boiler operates all 365 days a year.

### 6.3.2 Determining Whether Your Facility Meets Federal Regulations

A facility's potential to emit pollutants is important in determining how your facility is regulated under CAA, and whether you must obtain a CAA Title V operating permit. Whether and how you are regulated depends on several factors including whether your facility is located in a non-attainment area for a particular criteria pollutant and whether your facility's potential to emit meets the threshold for regulation as a major source. Together these will determine whether you must obtain a Title V permit.

Under the CAA, facilities are classified as major or minor sources based on potential to emit. Generally, a facility is considered a **major source** if its potential to emit is 100 tons per year (tpy) of any criteria pollutant. For facilities in nonattainment areas, the emission rate threshold for major sources varies by pollutant and area classification (e.g., moderate, serious, severe). The following table summarizes these thresholds. Note: The threshold values decrease as the degree of non-attainment increases from marginal or moderate to serious to severe, etc.

**Note:** a facility can be a major source for more than one pollutant.

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A facility is also a **major source** if it has the potential to emit 10 or more tpy of any single HAP, or 25 tpy or more of any combination of HAP emissions.

Based on the above discussion, if your facility meets any of the thresholds shown in Table 6-1, your facility is classified as a **major source**, and you must follow the requirements listed below:

- U** Obtain a Title V operating permit (see Section 6.3.3 *Air Pollution Permits*).
- U** If you are a major source in a nonattainment area, you must reduce your emissions through the use of Reasonably Available Control Technology (RACT) (see Section 6.2 *What is the Clean Air Act?*).
- U** If you emit HAPs, such as VOCs, check with your state environmental agency because it may regulate other pollutants in addition to those on the federal HAPs list.

Table 6-1. Major Source Emission Rate Thresholds in Nonattainment Areas

| Pollutant       | Area Classification <sup>1</sup>                      | Threshold <sup>2</sup> |
|-----------------|-------------------------------------------------------|------------------------|
| Ozone           | Marginal or Moderate                                  | 100 tpy VOCs or NOx    |
|                 | Serious                                               | 50 tpy VOCs or NOx     |
|                 | Severe                                                | 25 tpy VOCs or NOx     |
|                 | Extreme                                               | 10 tpy VOCs or NOx     |
|                 | Transport regions not classified as severe or extreme | 50 tpy VOCs            |
| Carbon monoxide | Moderate                                              | 100 tpy CO             |
|                 | Serious                                               | 50 tpy CO              |
| PM-10           | Moderate                                              | 100 tpy PM-10          |
|                 | Serious                                               | 70 tpy PM-10           |

<sup>1</sup> EPA has authority to classify SO<sub>x</sub>, NO<sub>2</sub>, and lead nonattainment areas by seriousness of the nonattainment problem, in order to apply attainment dates and other relevant criteria (CAA Section 172(a)(1)(A)). Currently, EPA has no plans to establish a classification scheme for SO<sub>2</sub> nonattainment areas (56 FR 13545).

<sup>2</sup> In ozone nonattainment areas, the major source threshold applies to VOC or NO<sub>x</sub> emissions, but not a sum of those emissions. For example, a source in a severe nonattainment area that emits 20 tpy of VOCs and 20 tpy of NO<sub>x</sub> is not considered a major source.

Source: *Clean Air Handbook 3rd Edition*. Government Institutes, Inc. 1998.

### 6.3.3 Air Pollution Permits

Permits can take several forms. These include the two discussed below - an **operating permit (Title V)** and a **preconstruction permit**, also known as a new source permit.

#### Permit Type: Title V Operating Permit

An operating permit (Title V) will contain all applicable and enforceable control requirements and, like all permits, will have a defined period of effectiveness. An operating permit serves three purposes:

- (1) Provides an inventory of air pollution emission units at sources. This inventory is used by federal, state, and local agencies to plan for either further reductions of air pollution or the maintenance of current air quality.
- (2) Indicates the control requirements to be used to reduce the emissions of pollutants at a facility.
- (3) Identifies how a facility demonstrates compliance.

The Title V operating permit specifies all of the applicable state and federal requirements, including emission limits; and recordkeeping, monitoring, and reporting requirements with which your facility must comply. It also has a defined period of effectiveness. You must obtain a Title V operating permit if you are a:

*Monitoring, recordkeeping, and reporting requirements for operating permits can be found at 40 CFR 70.6.*

- Major source with the potential to emit 100 or more tpy of any air pollutant in attainment areas (as discussed in Section 6.3.2 *Determining Whether Your Facility Meets Federal Regulations*).
- Major source with the potential to emit ten or more tpy of any one HAP, or 25 tpy of any combination of HAPs in attainment areas (as discussed in Section 6.3.2 *Determining Whether Your Facility Meets Federal Regulations*). Note: a non-major source of HAPs may be still be required to obtain a permit under NESHAP, see below.
- Major source subject to nonattainment provisions where lower thresholds apply depending on an area's severity classification for ozone, carbon monoxide or particulate matter.
- Facility subject to NSPS (40 CFR 60) or NESHAP (40 CFR 61 & 63).
- Facility required to have a pre-construction permit in a nonattainment area or prevention of significant deterioration area.

Although operating permits are issued by the states, EPA is authorized to review and approve the state's permit program, as well as to review and approve each individual permit issued by the state.

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**Minor sources.** Generally, there are two types of minor sources: **natural minor sources** and **synthetic minor sources**.

- **Natural minor sources** are facilities whose potential to emit are below applicable thresholds without any restrictions on operations or enforceable control technology. If your facility is a natural minor source, you are not subject to **major source** federal requirements. However, the state may require you to obtain a federally enforceable state operating permit (FESOP) (54 FR 27274). These state permits may require certain requirements, such as restrictions on production, hours of operation, and recordkeeping and reporting provisions.
- **Synthetic minor sources** are considered to be minor sources after installing restrictions on operations or enforceable control technology. A facility may declare itself to be a synthetic minor source if its potential to emit is less than the applicable thresholds and the permitting authority approves this declaration. With this approval, the facility accepts emissions limits, or installs control technology to achieve emissions reductions that allow the permitting authority to consider the facility a minor source.

Note: There are pollutants that are subject to EPA and/or state regulations regardless of a source's size. For example, solvent degreasers (used to clean machinery), are commonly subject to regulations regardless of a source's size.

**Compliance Assurance Monitoring.** EPA issued its final Compliance Assurance Monitoring (CAM) rule in October 1997 (40 CFR 64) in order to satisfy the requirements for monitoring and compliance certification under the Title V Operating Permits program (40 CFR 70) and the CAAA of 1990. The purpose of CAM is to help owners and operators of facilities to conduct effective monitoring of air pollution control equipment. Under CAM, you must monitor the operation and maintenance of your control equipment in order to evaluate the performance of control devices and report whether or not your facility meets established emission standards. If you find that your control equipment is not working properly, the CAM rule requires you to take action to correct any malfunctions and to report such instances to the appropriate enforcement agency. For more information on CAM, refer to EPA's website at <http://www.epa.gov/ttnuatw1/cam/>.

### Permit Type: Pre-construction Permit (also known as a New Source Permit)

A **pre-construction permit** is required before a new major emissions unit(s) can be built in a nonattainment area. A pre-construction permit is often called a **construction permit** or a **permit to install (PTI)**. Section 110 of the CAA regulates construction of major new sources or major modifications of existing sources in **nonattainment** areas through its **New Source Review (NSR) Program**. Your facility is

**Note: New source review provisions (CAA Section 110), which are required for state implementation plans, are administered independently from new source performance standards (NSPS), which authorize EPA to identify categories of new and modified sources that contribute significantly to air pollution that endangers human health or welfare (CAA Section 111).**

subject to NSR permitting requirements if you are either a new major source or an existing major source with significant modifications to equipment (e.g., for process operations) at your facility. States are required to implement NSR provisions in their SIPs (40 CFR 51). **Each state's regulations define when a facility is considered a new source.**

Under this program, major new sources or major modifications of existing sources in nonattainment areas must install control technology that will achieve a standard defined as the **Lowest Achievable Emission Rate (LAER)**. NSR also requires major new or modified sources in nonattainment areas to **offset** their emissions. You can offset new emissions by buying or trading emissions reductions from other sources. Most minor new source review programs do not require offsets, but many require the source to implement the **Best Available Control Technology (BACT)**.

**Minor New Source Review.** If you are a new source whose emissions are less than the threshold(s) for classification as a major, you may still be subject to minor new source review depending on your state. Because you may be more likely to modify your existing facility rather than build a new one, you should understand the regulatory implications of modifying your plant. **Each state has a federally approved program to regulate minor modifications and minor new sources.**

**Prevention of Significant Deterioration.** The Prevention of Significant Deterioration (PSD) program applies to facilities in **attainment** areas. Under the PSD program, certain types of stationary sources with 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 may be required to obtain a PSD permit. The permit must be obtained before construction of a **major** new source or a **major modification of an existing source** takes place. In order to obtain the PSD permit, the owner or operator of the facility must demonstrate that the proposed source will (1) comply with NAAQS and PSD **increments** (listed at 40 CFR 50.21); (2) employ best available control technology for regulated pollutants emitted in significant amounts, and (3) have no adverse impact on other air quality related values. **Note: PSD permitting requirements generally do not affect many food processing facilities; however, check with your state permitting authority.**

*In order to obtain a PSD permit, your facility must demonstrate that it will employ Best Available Control Technology (BACT). BACT is defined as the maximum degree of emission reduction achievable and takes into account economic, energy, and environmental factors.*

## 6.4 Risk Management Planning

As required under Section 112(r) of the amended CAA, EPA has promulgated the Risk Management Program Rule. The rule's main goals are to prevent accidental releases of regulated substances and to reduce the severity of those releases that do occur by requiring facilities to develop risk management programs. A facility's risk management program must incorporate three elements: a hazard assessment, a prevention program, and an emergency response program. These programs are to be summarized in a risk management plan (RMP)

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that will be made available to state and local government agencies and the public. Besides helping facilities prevent accidents, the rule can improve the efficiency of work operations by ensuring that workers are trained in proper procedures and by using preventive maintenance to reduce equipment breakdowns.

**Who's Covered.** If you have more than a threshold quantity of any of the **regulated substances** in a single process, you are required to comply with the regulation (40 CFR 68). In terms of this regulation, process means "manufacturing, storing, distributing, handling, or using" a regulated substance in any other way. Ammonia, chlorine, and propane are some of the regulated substances commonly used by food processing facilities. **Covered facilities must comply with the rule by June 21, 1999.**

*EPA has currently established a list of 140 regulated substances covered by these CAA regulations. These substances were published in the Federal Register on January 31, 1994; EPA amended the list by rule, published on December 18, 1997. EPA may amend the list in the future as needed.*

### **Three levels of compliance.**

The risk management planning regulation (40 CFR Part 68) defines the activities facilities must undertake to address the risks posed by regulated substances in covered processes. To ensure that individual processes are subject to appropriate requirements that match their size and the risks they may pose, EPA has classified them into 3 categories ("programs"):

*A risk management program is similar to OSHA's **Process Safety Management (PSM)** program for highly hazardous chemicals (29 CFR 1910.119) that became effective in May 1992. The difference between the programs is the focus. The OSHA regulation is concerned with worker safety, while EPA's CAA regulation is concerned with the safety of the environment and community. For more information about inventory and reporting requirements for OSHA hazardous chemicals, see Section 7.4 Hazard Chemical Inventory and Reporting.*

- **Program 1** requirements apply to processes for which a worst-case release, as evaluated in the hazard assessment, would not affect the public. These are processes that have **not** had an accidental release that caused serious offsite consequences.
- **Program 2** requirements apply to less complex operations that do **not** involve chemical processing.
- **Program 3** requirements apply to higher risk, complex chemical processing operations and to processes already subject to the **OSHA Process Safety Management Standard (29 CFR 1910.119)**.

**Risk Management Planning.** If your facility has more than a threshold quantity of any of the 140 regulated substances in a single process, you are required to develop a risk management program and to summarize your program in a risk management plan by June 21, 1999. If you are a facility with processes in Program 1, you must carry out the following elements of risk management planning:

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- C An offsite consequence analysis that evaluates specific potential release scenarios, including worst-case and alternative scenarios.
- C A five-year history of certain accidental releases of regulated substances from covered processes.
- C A risk management plan (RMP), revised at least once every five years, that summarizes and documents these activities for all covered processes.

Facilities with processes in Programs 2 and 3 must also address each of the following elements:

- C An integrated prevention program to manage risk. The prevention program will include identification of hazards, written operating procedures, training, maintenance, and accident investigation.
- C An emergency response program.
- C An overall management system to supervise the implementation of these program elements.

**Risk Management Plan.** If you do not already have a risk management plan, you should develop one as soon as possible. Your plan may include some or all of the following elements:

- Documentation of process safety information
- Process hazard analysis information
- Documentation of operating procedures
- Training program information
- Pre-startup review information
- Maintenance program information
- Management of Change program information
- Accident history
- Emergency response program information
- Worst-case and alternative release scenarios
- C Other elements

The plan you submit to EPA will summarize your program and will have to be made available to the public. (Note: EPA's deadline for determining whether facilities must submit their RMPs to EPA Headquarters or to the regional offices is June 21, 1999.) Once your plan is submitted, it will be reviewed for accuracy and completeness. A site visit also may be conducted at your facility by either EPA, state, or local officials to determine whether your plan accurately reflects your risk management program in operation.

**Industry-specific guidance.** To make compliance easier for small businesses, EPA has worked with trade associations and other industry groups to develop a series of industry-specific brochures that will assist businesses in creating their risk management programs. Of these, the brochures that may be applicable to the food processing industry include those for water treatment facilities (i.e., publicly owned treatment works), propane users, and operators of ammonia refrigeration systems. These brochures can be accessed at EPA's Chemical Accident Prevention and Risk Management Planning website at <http://www.epa.gov/ceppo/>.

**Excerpt from EPA's RMP Brochure for Operators of Ammonia Refrigeration Systems**  
*Under the Risk Management Program Rule, some operators of ammonia refrigeration systems will have to implement a risk management program and file a risk management plan (RMP) with EPA by June 21, 1999. If you store or use a total of more than 10,000 lbs of ammonia at your facility in one or more interconnected tanks, receiver vessels, or pipelines, you are likely to be subject to this rule. If you operate two refrigeration systems with adjacent equipment, consider the total quantity of ammonia in both systems when determining if this rule applies to you. For more information, access this brochure at <http://www.epa.gov/ceppo/> or see Section 6.5.2 Air Conditioners/Refrigeration Service and Disposal: Ammonia and CFCs.*

**Model Risk Management Programs.** EPA has been working with industry groups to develop model risk management programs. One of these is for ammonia refrigeration systems. To review this model program, refer to EPA's Chemical Accident Prevention and Risk Management Planning website at [http://www.epa.gov/swercepp/acc-pre.htm#Model Plans/](http://www.epa.gov/swercepp/acc-pre.htm#ModelPlans/).

**Communicating RMP Requirements.** The Food Industry Environmental Council (FIEC), a coalition of more than 50 food processors and trade associations, has developed materials to assist food processors in communicating with the public about risk management programs. These communication materials include the following:

- C "Backgrounders" on ammonia, chlorine, and propane;
- C A computer disk with the shell of a tri-fold brochure and filler language;
- C Communication guidelines;
- C A question and answer document; and
- C A resource and reference document.

The communication packages are available from your food trade association.

For more information about risk management planning requirements, visit EPA's Chemical Emergency Preparedness and Prevention Office's webpage at <http://www.epa.gov/ceppo/> or refer to Section 9.2 *Emergency Planning and Reporting Requirements*. You also may obtain copies of the rule and a wide variety of technical assistance materials, as well as answers to your specific questions, from EPA's RCRA/UST, Superfund and EPCRA hotline at 1-800-424-9346 or 703-412-9810.

## 6.5 Air Compliance Issues for Selected Operations

### 6.5.1 Boilers or Steam Generating Units

Most food processing facilities have industrial boilers or hot water heaters for generating steam or hot water for processing, cooking, or sanitation. Industrial boilers tend to be smaller in size, subject to more and greater load swings, operated at a lower capacity factor, and capable of utilizing multiple fuels. In addition, they often are the only supplier to their site and must be highly reliable. Coal, fuel oil, and natural gas are the major fossil fuels used by boilers. The combustion of these fossil fuels produces primarily sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>) and particulate emissions nationwide, with minor amounts of VOCs and carbon monoxide.

*If your facility stores fuel oil onsite, you must comply with the Oil Pollution Act's regulations. For more information, see Section 4.6 The Oil Pollution Act Regulation.*

If your facility has any of the following types of boilers, then you must comply with federal emission limits for NO<sub>x</sub>, SO<sub>2</sub>, and particulates:

- (1) A fossil fuel-fired or fossil fuel and wood residue-fired steam generator which has a heat input rate of more than 250 million Btu and was constructed after August 17, 1971 (40 CFR 60 Subpart D);
- (2) An industrial-commercial-institutional (ICI) steam generator which has a heat input rate of more than 100 million Btu and was constructed, modified, or reconstructed after June 19, 1984 (40 CFR 60 Subpart Db); or
- (3) A small ICI generator which has a heat input capacity ranging from 10 million Btu to 100 million Btu per hour or less and was constructed, modified, or reconstructed after June 9, 1989 (40 CFR 60 Subpart Dc).

As stated above, NO<sub>x</sub> emissions are common type of emissions from boilers and these emissions must meet federal limits. Table 6-2 *Federal Emission Standards for NO<sub>x</sub>* summarizes the federal NO<sub>x</sub> emission limits for the first two types of boilers listed above. Refer to 40 CFR 60, Subpart Dc for information on the third type of boiler listed above. Similar emission limits for SO<sub>2</sub> and particulates can be found in 40 CFR 60 Subparts D, Db, and Dc.

**State Standards.** In addition to the federal emission limits for NO<sub>x</sub>, SO<sub>2</sub>, and PM, state and local governments may have additional or more stringent emission limits. State emission standards for boilers vary depending on the **attainment** status of the geographical region as well as other factors (see Section 6.2 *What is the Clean Air Act?*). For example, while some states such as South Dakota defer to federal regulations when setting emission limits for steam generators, other states implement more stringent regulations. Also states, such as Pennsylvania and Massachusetts, have implemented NO<sub>x</sub> emission trading programs that may

affect different types and sizes of boilers within their states. **Contact your state regulatory agency for more information on state emission limits.**

**Activities Related to Emission Limits.** EPA is leading or participating in several major activities related to emission limits for NO<sub>x</sub> and VOCs, which will affect the regulation of steam generating units. Chief among these are the Ozone Transport Assessment Group (OTAG) and the Industrial Combustion Coordinated Rulemaking (ICCR) that are described below:

- **Ozone Transport Assessment Group (OTAG).** To assist with compliance with NAAQS, OTAG is identifying and recommending to EPA cost-effective control strategies for NO<sub>x</sub> and VOCs. OTAG, which is a partnership between EPA, the Environmental Council of the States (ECOS), and various industry and environmental groups, prepared the *Assessment of Control Technologies for Reducing Nitrogen Oxide Emissions From Non-Utility Point Sources and Major Source Areas - Appendix C*. This report provides an overview of NO<sub>x</sub> control technologies available for non-utility, fossil-fuel fired boilers and can be reviewed at EPA's website at <http://www.epa.gov/ttnotag1/finalrpt/chp5/appc.html>.
- **Industrial Combustion Coordinated Rulemaking (ICCR).** EPA is planning an ICCR for ICI combustion sources (e.g., boilers, process heaters, waste incinerators). EPA will develop recommendations for federal air emission regulations that address the various combustion source categories and pollutants. These regulations will be developed under Sections 111 (NSPS), 112 (NESHAP), and 129 (solid waste combustion) of the CAA. Seven categories of ICI combustion sources are listed for regulatory development as follows:
  - Industrial boilers (Sections 111 and 112);
  - Commercial-institutional boilers (Sections 111 and 112);
  - Process heaters (Sections 111 and 112);
  - Industrial-commercial solid waste incinerators (Sections 111 and 129);
  - Other solid waste incinerators (Sections 111 and 129);
  - Stationary combustion turbines (Sections 111 and 112); and
  - Stationary internal combustion engines (Sections 111 and 112).

The overall goal of the ICCR is to reduce the potential for conflicting or duplicative regulations for the various combustion source categories, rather than regulating each source category individually. This approach will facilitate consistency and produce greater environmental benefits at lower cost. For more information on the status of ICCR, refer to EPA's website at <http://www.epa.gov/ttn/iccr/>.

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Table 6-2. Federal Emission Standards for NO<sub>x</sub> (Emission limits for SO<sub>2</sub> and PM can be found in 40 CFR 60, Subparts D, Db, and Dc.)

| <b>Fossil-Fuel-Fired Steam Generators with a heat input rate &gt; 250 million Btu per hour constructed or modified after August 17, 1971 (40 CFR 60 Subpart D)</b>                                            |                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Fuel Type</b>                                                                                                                                                                                              | <b>Emission Limit</b>                                                          |
| Gaseous fossil fuel                                                                                                                                                                                           | 0.20 lb/Mbtu                                                                   |
| Liquid fossil fuel <sup>1</sup>                                                                                                                                                                               | 0.30 lb/Mbtu                                                                   |
| Solid fossil fuel (mixed with or without wood residue) <sup>1</sup>                                                                                                                                           | 0.70 lb/Mbtu                                                                   |
| Lignite or lignite and wood residue <sup>1</sup>                                                                                                                                                              | 0.60 lb/Mbtu                                                                   |
| <b>For Industrial-Commercial-Institutional Steam Generating Units with a heat input rate &gt; 100 million Btu per hour constructed, modified, or reconstructed after June 19, 1984 (40 CFR 60 Subpart Db)</b> |                                                                                |
| <b>Fuel Type</b>                                                                                                                                                                                              | <b>Emission Limit</b>                                                          |
| Natural Gas and distillate oil                                                                                                                                                                                |                                                                                |
| 1) Low heat release rate                                                                                                                                                                                      | 0.10 lb/Mbtu                                                                   |
| 2) High heat release rate                                                                                                                                                                                     | 0.20 lb/Mbtu                                                                   |
| Residual Oil                                                                                                                                                                                                  |                                                                                |
| 1) Low heat release rate                                                                                                                                                                                      | 0.30 lb/Mbtu                                                                   |
| 2) High heat release rate                                                                                                                                                                                     | 0.40 lb/Mbtu                                                                   |
| Coal                                                                                                                                                                                                          |                                                                                |
| 1) Mass-feed stoker                                                                                                                                                                                           | 0.50 lb/Mbtu                                                                   |
| 2) Spreader stoker and fluidized bed combustion                                                                                                                                                               | 0.60 lb/Mbtu                                                                   |
| 3) Pulverized coal                                                                                                                                                                                            | 0.70 lb/Mbtu                                                                   |
| 4) Lignite (except lignite mined in ND, SD, or MT)                                                                                                                                                            | 0.60 lb/Mbtu                                                                   |
| 5) Lignite mined in ND, SD, or MT and combusted in a slag tap furnace                                                                                                                                         | 0.80 lb/Mbtu                                                                   |
| 6) Coal-derived synthetic fuels                                                                                                                                                                               | 0.50 lb/Mbtu                                                                   |
| Duct burner in system:                                                                                                                                                                                        |                                                                                |
| 1) Natural gas and distillate oil                                                                                                                                                                             | 0.20 lb/Mbtu                                                                   |
| 2) Residual oil                                                                                                                                                                                               | 0.40 lb/Mbtu                                                                   |
| Mixtures of coal, oil, or natural gas.                                                                                                                                                                        | Refer to formula defined in 40 CFR 60 Subpart Db; Section 60.44b.              |
| Coal or oil, or a mixture with other fuels.                                                                                                                                                                   | Refer to formula listed in 40 CFR 60 Subpart Db; Section 60.44b.               |
| Natural gas mixed with wood, municipal-type solid waste, or other solid fuel (except coal).                                                                                                                   | 0.30 lb/Mbtu <sup>2</sup>                                                      |
| Coal, oil, or natural gas mixed with by-product/waste.                                                                                                                                                        | Refer to formula defined in 40 CFR 60 Subpart Db; Section 40.44b. <sup>3</sup> |

<sup>1</sup> See 40 CFR 60, Subpart Db Section 60.44 for specific exceptions to these emission limits.

<sup>2</sup> Does not apply if facility has an annual capacity factor of 10% or less for natural gas and is subject to federally enforceable requirement limiting operations to an annual capacity factor of 10% or less.

<sup>3</sup> Does not apply if facility has an annual capacity factor of 10% or less for coal, oil, and natural gas and subject to federally enforceable requirement limiting operations to an annual capacity factor of 10% or less.

## 6.5.2 Air Conditioners/Refrigeration Service and Disposal: Ammonia and CFCs

### Ammonia

Most food processing facilities use closed loop ammonia refrigeration systems for heat exchange. Ammonia is handled as a gas and must be added to refrigeration systems to replace amounts lost through leaks or because of losses when purging a section of the system for maintenance. Because ammonia is not a listed air pollutant or classified as one of the 188 hazardous air pollutants, a Title V operating permit for ammonia emissions is not likely to be required. However, it is possible that ammonia will be subject to state permitting requirements.

Ammonia refrigeration systems are subject to Section 112(r) of the amended CAA, which mandates EPA to publish rules and guidance for chemical accident prevention. Ammonia is a volatile chemical and will be released to air through system filling, relief vents, and leaks in valves and fittings. All ammonia lost through these means should be reported as fugitive emissions in a Toxic Release Inventory (TRI) report (40 CFR 372), if the total is over the threshold amount. See Section 7.5 *Toxic Chemical Release Reporting - Section 313* for more information about TRI reporting.

On January 31, 1994, EPA promulgated a final list of 140 regulated substances and threshold quantities, which are identified under Section 112(r). According to the final list, ammonia is a regulated substance if it is at a **concentration of at least 20 percent** and exceeds the established threshold quantity of 20,000 lbs (40 CFR 68). Therefore, if your facility has a **process** that uses a 20 percent ammonia solution which exceeds the threshold quantity established by EPA, you must develop and implement a risk management plan (RMP) for that process. See Section 6.4 *Risk Management Planning* for more information. For a comparison of these requirements to similar requirements under other EPA statutes, see Section 9.2 *Emergency Planning and Reporting Requirements*.

### Chlorofluorocarbons (CFCs)

Your food processing facility may be subject to requirements of the stratospheric ozone protection program if you have motor vehicle air conditioners, certain appliances (air conditioners, refrigerators, and freezers), and industrial process refrigeration units that use CFCs and other class I and class II substances (see box).

The CAA provides a framework for the regulation of ozone-depleting substances such as CFCs to protect the stratospheric ozone layer. EPA's stratospheric ozone regulation does the following:

- Bans the use of certain ozone-depleting substances in non-essential products;
- Requires labels for products containing or manufactured with regulated ozone-depleting substances;
- Bans the production of many of these substances (see 40 CFR 82).

EPA has established requirements for servicing and disposal of air-conditioning and refrigeration equipment that contains regulated ozone-depleting refrigerants. These requirements described briefly below are intended to minimize the release of such refrigerants to the atmosphere. If you own/operate appliances containing ozone-depleting refrigerants, you must do the following:

- U** When opening any appliance containing refrigerants for maintenance, service, repair, or disposal, you must have at least one piece of certified, self-contained recovery equipment available at your facility.
- U** Notify EPA that such equipment is available at your facility. This equipment must be operated to certain specified standards that minimize atmospheric release of refrigerants.
- U** If your appliances contain 50 or more pounds of refrigerant, you must repair leaks in a timely manner. You must maintain records documenting the date and type of all servicing performed on the appliance, as well as the quantity of refrigerant added.
- U** If you are an appliance owner/operator who adds the refrigerant, you must maintain records of refrigerant purchased and added.
- U** If you use technicians to service and maintain refrigerant-containing appliances, they must be certified by an approved technician certification program.
- U** If you employ such technicians, you must maintain records demonstrating compliance with the certification requirement (see 40 CFR 82).

*Ozone-depleting chemicals to be regulated have been divided into two classes based on their ozone depletion potential:*

**Class I** includes specified CFCs, halons, methyl chloroform, carbon tetrachloride, methyl bromide, and HBFCs. Production of these chemicals were phased out in 1996, except for methyl bromide, production of which will be banned in 2001.

The principal substances included in **Class II** are hydrochlorofluorocarbons (HCFCs). Some HCFCs will be phased out either partially (HCFC-22, HCFC-1426) or entirely (HCFC-1416) beginning in 2003. The HCFCs with the most severe ozone-depleting effects will be phased out first. **Note that the phase out is for production and importation, not use.** Thus HCFCs can be used as refrigerants after 2020; however, they may not be available.

In addition to federal regulations, many state and local governments have enacted legislation and ordinances limiting the production and use of ozone-depleting substances. Contact your state permitting authority to find out about all requirements that apply to you. For information about EPA's Stratospheric Ozone Protection Program [including EPA's *Significant New Alternative Policy* (SNAP) program], call the Stratospheric Ozone Hotline at 1-800-296-1996 or visit EPA's website at <http://www.epa.gov/ozone/>.

### 6.5.3 Building Renovation/Demolition: Asbestos

If you are renovating or demolishing a structure on your property, you have the potential to release asbestos fibers that can create serious worker health and safety problems. Asbestos is an insulation material widely used in the past where fire retardation was required or desirable. Applications for asbestos include, but are not limited to, floor tiles, ceiling tiles, siding, and thermal system insulation. Renovations or demolition activities involving asbestos-containing materials are regulated by the CAA's NESHAPs (see CAA Section 112; 40 CFR 61, Subpart M). Although considered a serious health hazard, asbestos is not regulated as a RCRA hazardous waste.

Asbestos fibers have been linked to serious adverse health effects from the inhalation of airborne asbestos fibers. However, if asbestos is present in your facility, it does not mean that your employees are in danger. As long as the material containing the asbestos remains in good condition and is not disturbed, exposure to asbestos fibers is unlikely. The threat of exposure arises when asbestos-containing materials are disturbed through repair, renovation, demolition, or natural disturbances, and asbestos fibers potentially are released. Government regulations now are requiring that asbestos be phased out of production and use.

*The chances for human exposure to asbestos are highest during maintenance work or building demolition.*

If you are planning any renovation or demolition activities, you should assume that most old building construction materials contain asbestos. Typical asbestos-containing materials include pipe and duct insulation, fireproofing, roofing materials, floor tile, and transite pipe and sheet goods. Many other building materials, such as ceiling tiles, wall board, plasters, and fire doors, may also contain asbestos.

If you are planning any renovation or demolition activity at your facility, you should:

- U** Contact your regional environmental agency (in some cities or counties, this may be the health department) before renovating or demolishing a building or structure, regardless of whether asbestos-containing material is present or only suspected.
- U** Remove asbestos-containing materials using only qualified personnel in accordance with all applicable local, state, and federal laws. This material must be removed *prior* to any demolition or renovation activity. It is recommended that you review your contractor's employee training records and licenses.
- U** Use special handling procedures for asbestos disposal such as asbestos certified contractors for assessment and demolition of pre-1980 buildings, as well as posting of signs at disposal facilities.

For demolition activities, many states have a formal notification process before demolition may begin. For example, Ohio requires at least a 10 day notice before any demolition or construction activity begins. Other requirements may include inspection by a licensed building inspector before construction or demolition may begin. **Check with your state and local authorities to determine whether additional asbestos requirements apply to you.**

### 6.5.4 Odor Emissions

The combination of a broad regulatory framework, increased sensitivity and demand of the general public for a clean and pleasant environment, and reduced land areas available for isolation of industrial operations from the public areas have forced all types of industries including the food processing industry to control odor emissions. Organic and inorganic compounds emitted from various food processing operations may become nuisances in your community when they carry objectionable odors as perceived by the general public. Though there are no federal regulations for odor emissions, you should be aware that there may be state and local regulations.

There are two basic principles for controlling odors at a food processing plant:

- U** Reduction of odors at the generation sources
- U** Removal of odors from collection air-streams before the odors are discharged into the atmosphere.

Odors generated from food processing plants usually are a mixture of various organic and inorganic compounds in low concentrations. Most of these compounds are reduced carbon, nitrogen and/or sulfur compounds. Typical odorous compounds encountered in food processing operations include aldehydes, ketones, alcohols, acids, ammonia, amines, sulfides, mercaptans, and hydrogen sulfide. In some cases, the odors also may be caused by VOCs (e.g., VOCs from drying and roasting activities) which are less biodegradable. The physical and chemical characteristics of specific odors are affected largely by the types of odor sources. Effective, application-specific air cleaning technologies are needed to help food processors make their operations environmentally friendly.

*For more information on odor emissions, refer to **Odor Control and Wastewater Treatment**, published by Water Environment Federation and American Society of Civil Engineers (1995).*

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## 7. HOW DO I COMPLY WITH THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT REGULATIONS?

### 7.1 Introduction

This section presents an overview of the Emergency Planning and Community Right-to-Know Act (EPCRA) planning, reporting, and notification requirements for your food processing facility. Because of concern over the Bhopal tragedy of 1984 and many state and community right-to-know laws, Congress passed Title III of the Superfund Amendments and Reauthorization Act (SARA Title III) in 1986. Title III of SARA, also known as EPCRA, establishes requirements for federal, state, and local governments and industry regarding emergency planning and “community right-to-know” reporting on hazardous and toxic chemicals. To this end, it requires industry to report detailed information concerning the use, generation, release, and other waste management activities of hazardous and toxic materials.

EPCRA is unique compared to other environmental statutes because it does not establish release limitations, standards of practice, or standards of operation for industry. The purpose of EPCRA is to:

- C Encourage and support industry’s emergency planning for response to chemical accidents (in coordination with state and local governments) through emergency planning and emergency notification; and
- C Provide local governments and the public with information about possible chemical hazards in their communities by requiring facilities to (1) report to their State Emergency Response Commissions (SERCs), Local Emergency Planning Committees (LEPCs), and local fire departments their hazardous chemical inventory, and (2) report to federal and state authorities their toxic chemical releases and other waste management practices.

*Under the emergency planning requirements of EPCRA, each state governor must appoint a SERC. Each SERC in turn appoints LEPCs. For addresses for these groups, see Appendix B of this guide. For more information, access <http://www.epa.gov/ceppo/>.*

Your facility may be subject to emergency planning, reporting, notification, and response requirements under EPCRA including:

- C Emergency planning (Sections 301-303)
- C Emergency release notification (EPCRA Section 304 and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 103)

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- C Hazardous chemical inventory and reporting (MSDS and Tier reporting) (Sections 311 and 312)
- C Toxic chemical release reporting (Section 313).

The particular substances subject to these EPCRA requirements are defined under 3 statutes; EPCRA, CERCLA, and Occupational Safety and Health Administration (OSHA). They are identified using various terms as shown in Table 7-1 below. Also, the types of substances subject to each of the EPCRA requirements vary. Refer to the sections indicated in Table 7-1 for more information.

Table 7-1. Guide to Substances Subject to EPCRA

| Section of the Law                                                          | Types of Substances Regulated        | CFR Citation |
|-----------------------------------------------------------------------------|--------------------------------------|--------------|
| Emergency Planning<br>EPCRA Sections 301-303                                | EPCRA extremely hazardous substances | 40 CFR 355   |
| Emergency Release Notification<br>EPCRA Section 304/CERCLA<br>Section 103   | EPCRA extremely hazardous substances | 40 CFR 355   |
|                                                                             | CERCLA hazardous substances          | 40 CFR 302   |
| Hazardous Chemical Inventory<br>and Reporting<br>EPCRA Sections 311 and 312 | EPCRA extremely hazardous substances | 40 CFR 370   |
|                                                                             | OSHA hazardous chemicals             | 29 CFR 1910  |
| Toxic Chemical Release Reporting<br>EPCRA Section 313                       | Toxic chemicals                      | 40 CFR 372   |

Keep in mind the following distinctions among the EPCRA sections; EPCRA Sections 301-303, 311, and 312 focus on chemicals **present at** your facility, whereas EPCRA Section 313 focuses on chemical **manufactured, processed, or otherwise used**. EPCRA Section 304 focuses on emergency notification of a **release** of specific substances.

It is important to note that if you eliminate EPCRA chemicals from your operations through pollution prevention (P2) activities, you also will eliminate the associated planning and notification requirements. P2 is an excellent opportunity to decrease your facility's regulatory burden.

Section 7.2 summarizes the principal planning and reporting requirements for EPCRA Sections 301-303. Section 7.3 presents the emergency notification and release reporting requirements under EPCRA Section 304 and CERCLA Section 103.

Section 7.4 presents the hazardous chemical inventory and reporting requirements under EPCRA Sections 311 and 312.

Finally, Section 7.5 presents an overview of the EPCRA Section 313 reporting requirements and estimation of releases and other waste management quantities. EPA's Office of Pollution Prevention and Toxics (OPPT) has developed substantive guidance for food processors on compliance with EPCRA 313, entitled, *EPCRA Section 313 Reporting*

**New Guidance:** For more information on EPCRA 313 requirements, see *EPCRA Section 313 Reporting Guidance for Food Processors (EPA 745-R-98-011, September 1998)*.

*Guidance for Food Processors* (EPA 745-R-98-011, September 1998). The text in Section 7.5 is excerpted from OPPT's guidance for this industry sector. Please refer to the OPPT guidance document for additional information.

## 7.2 Emergency Planning

The emergency planning sections (Sections 301-303) of EPCRA are designed to develop state and local governments' emergency response and preparedness capabilities through better coordination and planning, especially with the local community.

Under Section 302 of EPCRA, if your food processing facility, no matter how small, has any of the extremely hazardous substances (EHSs) listed in 40 CFR 355 in amounts equal to or in excess of certain minimum amounts (called threshold planning quantities [TPQs]), you must participate in emergency planning activities. EHSs typically found at food processing facilities include ammonia (for refrigeration), chlorine (for disinfection), and nitric and sulfuric acids (for cleaning). The threshold planning and spill/release reportable quantities (see side box) for these chemicals are listed below.

**A threshold planning quantity (TPQ)** is the amount of an EHS, in pounds, at a facility that triggers a reporting requirement. EHSs and their TPQs are listed in 40 CFR 355.

**A reportable quantity (RQ)** is the amount of an EHS or CERCLA hazardous substance released into the environment within a 24-hour period. RQs for EHSs are found in 40 CFR 355, Appendices A and B. RQs for CERCLA hazardous substances are found in 40 CFR 302, Table 302.4. The RQ for any other substance is one pound.

| <u>Extremely<br/>Hazardous Substances</u> | <u>Threshold Planning<br/>Quantity (lbs)</u> | <u>Reportable<br/>Quantity (lbs)</u> |
|-------------------------------------------|----------------------------------------------|--------------------------------------|
| Ammonia                                   | 500                                          | 100                                  |
| Chlorine                                  | 100                                          | 10                                   |
| Nitric Acid                               | 1,000                                        | 1,000                                |
| Sulfuric Acid                             | 1,000                                        | 1,000                                |

If your facility has any of the EHSs onsite in quantities equal to or greater than the TPQs, you must notify the SERC and LEPC within 60 days after the EHSs are present in these quantities. For more information on EPCRA Section 302 reporting requirements, contact the RCRA/UST, Superfund and EPCRA Hotline at 1-800-424-9346 or 703-412-

**Blended Chemicals:** When calculating amounts of blended chemicals, it is important to note that only the specific portion of the blend which contains the EHS is counted, not the whole blend. For example, 100 lbs of a 20 percent chlorine compound counts as 20 lbs, not 100 lbs, of chlorine.

9810, or access EPA's Chemical Emergency Preparedness and Prevention Office homepage at <http://www.epa.gov/ceppo/>.

### 7.3 Emergency Release Notification

The emergency release notification requirements set out in EPCRA and CERCLA enable federal, state, and local authorities to effectively prepare for and respond to chemical accidents. The release notification requirements differ slightly between the two laws, but the requirements are interrelated as explained below. Releases of both EPCRA EHSs and CERCLA hazardous substances are reportable under EPCRA Section 304, whereas only releases of CERCLA hazardous substances are reportable under CERCLA. Another difference between the statutes is EPCRA requires that Section 304 release notifications be provided to SERCs and LEPCs, whereas CERCLA requires that Section 103 release notifications be provided to the National Response Center (NRC).

**What is the NRC?** The primary function of the National Response Center (NRC) is to serve as the sole national (federal) point of contact for reporting all oil, chemical, and other discharges into the environment anywhere in the U.S. and its territories. For more information on the NRC, access <http://www.epa.gov/oilspill/>.

**Releases and Reportable Quantities.** The first step in determining if release notification requirements are triggered is assessing whether or not a release has occurred. Under EPCRA, a release is as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including abandonment or discharging of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant. EPCRA's definition includes releases of both EPCRA EHSs and CERCLA hazardous substances (40 CFR 355.20), and EPCRA Section 304 carries an additional requirement that a facility must produce, use, or store the substance in order to have a **reportable release**. The list of EHSs can be found at 40 CFR 355, Appendices A and B. The term **hazardous substance** is defined in CERCLA 101(14), and these substances are listed in 40 CFR 302, Table 302.4.

In order for a release of a EHS or CERCLA hazardous substance to be reportable, a certain amount must be released into the environment within a 24-hour period. This amount, called the **reportable quantity (RQ)**, triggers emergency release notification requirements. For each CERCLA hazardous substance and EHS identified, EPA has designated a reportable quantity (RQ) of 1, 10, 100, 1,000, or 5,000 pounds. Reportable quantities are listed in 40 CFR 355, Appendices A and B.

**Notification.** In order to ensure proper and immediate responses to potential chemical hazardous, EPCRA Section 304 requires facilities to **notify SERCS and LEPCs** of releases of EPCRA EHSs and CERCLA hazardous substances when the release equals or exceeds the RQ (EPCRA 304(a)). To trigger EPCRA Section 304 notification, there must be:

- A facility at which a hazardous chemical is produced, used, or stored; **AND** (all of the following)
- A release

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- Of an EHS or CERCLA hazardous substance
- Into the environment
- With a potential to affect human health and the environment offsite
- That equals or exceeds a reportable quantity
- Within a 24-hour period.

The LEPCs and SERCs will coordinate response activity to your spill or accident, and prevent harmful effects to the public. These agencies also may provide instructions to you regarding appropriate response procedures.

Additionally, when there is a release of a CERCLA hazardous substance in an amount equal to or in excess of the RQ for that substance (CERCLA 103(a), 40 CFR 302.6), CERCLA requires the person in charge of a vessel or facility to immediately notify the **National Response Center at 1-800-424-8802**. There are six specific conditions that must be met to trigger the CERCLA requirement for notifying the National Response Center. There must be a:

- C Release
- C Of a CERCLA hazardous substance
- C Into the environment
- C From a vessel or facility
- C That equals or exceeds a reportable quantity
- C Within a 24-hour period.

**Releases That Are Not Reportable.** There are several types of releases that are excluded from the requirements of both EPCRA and CERCLA release notification. These releases were excluded originally under CERCLA Section 101(22) because they are covered by other regulatory programs. The regulations found at 40 CFR 355.40(a)(2)(v) extend these statutory exclusions under CERCLA to the release reporting requirements under EPCRA. Examples of these instances are included here for your reference (see box).

### When No Notification Is Required (40 CFR 355.40):

1. Releases which result in exposure to persons solely within the boundaries of the facility;
2. Federally permitted releases are not reportable [CERCLA Sections 103(a) and (b) and EPCRA Section 304(a)(2)(A)];
3. Releases that are continuous and stable in quantity and rate (as defined in 40 CFR 302.8(b));
4. Application of pesticide products registered under the Federal Insecticide, Fungicide, and Rodenticide Act (CERCLA Section 103(e));
5. Releases not meeting the definition of release under CERCLA Section 101(22); and
6. Any radionuclide release which occurs naturally in soil.

**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 do not.**

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Being familiar with your responsibilities for when to report (and when not to report) will help you in responding quickly when a release does occur. When you are required to report, you must complete the initial notification and follow-up actions as discussed below.

**Initial Notification.** It is very important to know which agency(s) to notify and to do so as soon as practical for any reportable spill. Initial notifications can be made by telephone, radio, or in person. Under EPCRA, initial notification is required **immediately** (see box) upon discovering a spill. 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. This information should include:

*Although the term "immediately" is not further defined in the regulations, EPA generally defines immediate notification of LEPCs, SERCs, and the National Response Center as within one hour of discovery of a reportable spill or release.*

- C Chemical name/identity of material(s) released
- C Whether the material(s) is an EPCRA extremely hazardous substance (listed in 40 CFR 355, Appendices A and B) or a CERCLA hazardous substance (listed in 40 CFR 302.4)
- C Estimate of the quantity of any material released
- C Time and duration of the release
- C Whether the release was to the air, water, and/or land
- C Any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention necessary for exposed individuals
- C Proper precautions, such as evacuation or sheltering in place
- C Name and telephone number of the person(s) to be contacted for further information.

**Follow-up Actions for a Spill or Release.** After the initial communication is established with the appropriate agencies, your facility must provide a written follow-up emergency notice, as soon as practicable after the release. The follow-up notice or notices must update information provided in the initial notice and provide information on actual response actions taken, health risks associated with the release, and advice regarding medical attention necessary for exposed individuals.

Your state also may have requirements for notifications and emergency response actions. To identify the appropriate state agencies, call the RCRA/UST, Superfund and EPCRA Hotline at 1-800-424-9346 or 703-412-9810.

## 7.4 Hazardous Chemical Inventory And Reporting

Moving from the requirements for releases of EPCRA EHSs and CERCLA hazardous substances discussed above, this section addresses the requirements for having EPCRA EHSs and OSHA hazardous chemicals stored on your property.

**Review this section carefully.** *There have been several EPA cases against food processors for failure to comply with EPCRA Section 311 and 312 requirements.*

The hazardous chemical inventory and reporting provisions outlined in EPCRA Sections 311 and 312 require you to inventory the hazardous chemicals present onsite at your facility in amounts equal to or in excess of TPQs. This inventory must contain each hazardous chemical's identity, physical and health hazards, and location. There are two reporting mechanisms in the hazardous chemical inventory program:

- A **one-time notification** of the presence of hazardous chemicals onsite in excess of threshold levels (EPCRA Section 311); and
- An **annual notification** detailing the locations and hazards associated with the hazardous chemicals found on facility grounds (EPCRA Section 312).

If your facility meets the applicability criteria described below, you are required to submit these reports to the SERC, LEPC, and local fire department.

**Applicability.** To be subject to reporting under EPCRA Sections 311 and 312, your facility must meet the applicability criteria (40 CFR 370.20). Applicability is two-fold.

- (1) First, your facility must be regulated by the OSHA's Hazardous Communication Standard (HCS).
- (2) Second, your facility must exceed EPA-established thresholds for hazardous chemicals onsite at any one time.

OSHA's HCS requires facilities to procure or prepare material safety data sheets (MSDSs) for the hazardous chemicals found at the facility (29 CFR 1910.1200). In general, the chemicals regulated by OSHA's HCS pose a hazard to workers using the substances. **Any facility that is required by OSHA to prepare or have available an MSDS for a hazardous chemical is subject to EPCRA Sections 311 and 312 if the chemical is present onsite at any one time in excess of threshold levels.** There is no list of hazardous chemicals subject to reporting. The key to determining whether or not a chemical is considered hazardous is the requirement to have an MSDS.

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**Threshold levels.** The threshold level varies depending on how the chemical is classified.

- C The reporting threshold for hazardous chemicals that are EPCRA extremely hazardous substances (EHSs) is 500 pounds or that chemical's threshold planning quantity (TPQ), whichever is lower. EHSs are listed in 40 CFR 355, Appendix A and B.
- C The reporting threshold for hazardous chemicals that are **not** EHSs is 10,000 pounds.

**Exemptions.** Although OSHA requires MSDSs for a large number of chemicals, there are a number of exemptions to the OSHA requirement to maintain MSDSs, **consequently exempting them from EPCRA Sections 311 and 312 reporting.** These are listed in 29 CFR 1910.1200(b)(6).

In addition, SARA Title III Section 311(e) lists five exemptions from the definition of hazardous chemical for purposes of compliance with SARA Title III Sections 311 and 312 (40 CFR 370.2). These exemptions cover chemicals that are either regulated under other programs, do not present a hazard during normal use, are chemicals that the community is already aware of, or are under the control of trained personnel. The exemptions cover:

- C Food and Drug Administration (FDA) regulated substances (e.g., any food, food additive, color additive, drug, or cosmetic regulated by FDA).
- C Solid manufactured items.
- C Substances packaged as consumer products.
- C Medical and research lab materials.
- C Substances used in agricultural operations.

It is important to remember that these exemptions apply to specific chemicals within the scope of the exemption only, **not** to all hazardous chemicals at a particular facility.

**Section 311 MSDS and Hazardous Chemical Inventory Reporting.** Under Section 311 of EPCRA, you must submit a **one-time notification** identifying the hazardous chemicals (including EPCRA extremely hazardous substances and OSHA hazardous chemicals) present at your facility in amounts equal to or in excess of threshold levels to the SERC, LEPC, and local fire department (40 CFR 370.21).

To meet the reporting requirement, your facility must submit the following information for each EPCRA EHS and OSHA hazardous chemical onsite in amounts that equal or exceed the threshold levels, either:

- C An MSDS (or copies of MSDSs); **or**
- C A list of the EPCRA EHSs and OSHA hazardous chemicals grouped by hazard category. Hazard categories include immediate health hazard, delayed health hazard, fire hazard, sudden release of pressure hazard, or reactive hazard. The list must include the hazardous chemical name or common name and any hazardous component of each hazardous chemical.

**MSDSs:** Contact your vendor(s) to obtain MSDSs for chemicals onsite.

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The information needed for compiling this list can be obtained by examining the MSDS for each chemical. Again, the MSDSs or list of hazardous chemicals is a one-time submission and there is no form required by EPA. (You should check with your SERC and LEPC to see if they have a required form.)

If, after initial reporting, your facility finds that it has a hazardous chemical that is newly covered in amounts equal to or excess of the threshold level or there has been significant new information on an already reported chemical, you must update the information reported under Section 311. You must supply this supplemental information within 3 months after discovery of significant new information (40 CFR 370.21(c)).

**Section 312 Tier Reporting.** Under Section 312 of EPCRA, your facility must meet an **annual reporting requirement** for OSHA hazardous chemicals and EPCRA EHSs in amounts equal to or in excess of threshold levels. If equaling or exceeding the threshold levels at any time in the preceding year, you must submit to the SERC, LEPC, and local fire department an "Emergency and Hazardous Chemical Inventory Form." This form must be submitted by March 1 and covers the previous calendar year.

The reporting thresholds are the same as for submission of MSDSs under EPCRA Section 311: 500 pounds or the TPQ (whichever is lower) for EPCRA EHSs and 10,000 pounds for an OSHA hazardous chemical. Keep in mind that if you equal or exceed these threshold quantities **at any time** during the year, then you are subject to this reporting requirement. The threshold quantities should **not** be considered **the average amount** of a given chemical onsite during the year.

EPA publishes two types of inventory forms, **Tier I** and **Tier II**, for reporting this information. The Tier I form requires facilities to report general information on the amount and location of hazardous chemicals. Tier II forms require more detailed information on each hazardous chemical. At a minimum, you must report the information contained in EPA's Tier I form.

As required by statute, Tier I information includes the general elements listed below:

- C An estimate (in ranges) of the maximum amount of chemicals for each hazard category (i.e., immediate health, delayed health, fire, sudden release, and reactive) present at the facility at any time during the preceding calendar year;
- C An estimate (in ranges) of the average daily amount of chemicals in each category; and
- C The general location of hazardous chemicals in each category.

While federal regulations require only the submission of a Tier I form, EPA encourages, and some states require, the use of the Tier II form. EPA offers assistance in completing the Tier II form through its *Tier2 Reporting and Inventory System*. This system walks you through the preparation of the Tier II reporting form. For more information, access <http://www.epa.gov/swercepp/tools.html/>.

*Some states have their own form and may allow electronic reporting. Contact your state for more information.*

## 7.5 Toxic Chemical Release Reporting— Section 313

Section 313 of EPCRA requires certain designated businesses to submit annual reports (commonly referred to as Form Rs and Form As) on the amounts of more than 600 EPCRA Section 313 chemicals and chemical categories released and otherwise managed (40 CFR 372). EPA selects the chemicals based on the potential for acute health effects, chronic health effects, and environmental effects. The original list of chemicals subject to Section 313 reporting was a combination of chemical lists from the states of New Jersey and Maryland.

All facilities meeting the Section 313 reporting criteria must report the annual releases and/or other waste management activities (routine and accidental) of EPCRA Section 313 chemicals to all environmental media. A separate report is required for each listed chemical that is manufactured (including imported), processed or otherwise used above the reporting threshold. The reports must be submitted to EPA and State or Tribal governments, on or before July 1, for activities in the previous calendar year. The owner/operator of the facility on July 1 is primarily responsible for the report, even if the owner/operator did not own the facility during the reporting year.

EPA can modify the list of chemicals, or industry or the public can petition EPA to modify the list. Therefore, before completing your annual report, be sure to check the most **current** list included with the *Toxic Chemical Release Inventory Reporting Forms and Instructions (TRI Forms and Instructions)*. You can request this package from the Resource Conservation and Recovery Act/Underground Storage Tank (RCRA/UST), Superfund and Emergency Planning and Community Right-to-Know Act (EPCRA) Hotline at 1-800-424-9346 or 703-412-9810 (Washington, DC, metropolitan area).

### 7.5.1 EPCRA Section 313 Reporting Guidance for Food Processors

To assist food processing facilities in complying with the reporting requirements of EPCRA Section 313 and Section 6607 of the Pollution Prevention Act of 1990 (PPA), EPA's Office of Pollution Prevention and Toxics (OPPT) has prepared a guidance manual, entitled *EPCRA Section 313 Reporting Guidance for Food Processors* (EPA 745-R-98-011, September 1998). This new guidance supplements the *TRI Forms and Instructions*, and supercedes EPA's earlier document, entitled *Section 313 Emergency Planning and Community Right-to-Know Act, Guidance for Food Processors* (June 1990). Additional discussion on specific issues can be found in EPA's current version of *EPCRA Section 313, Questions and Answers*, which is available on EPA's TRI website (<http://www.epa.gov/opptintr/tri>), or by contacting the RCRA/UST, Superfund and EPCRA Hotline at 1-800-424-9346 or 703-412-9810.

The *EPCRA Section 313 Reporting Guidance for Food Processors* (9/98) includes the following changes or additions: 1) more detailed examples and common industry-specific reporting errors;

2) EPCRA 313 regulations promulgated since 1990; 3) EPA's interpretive guidance on various issues specific to the food processing industry; and 4) input from the National Food Processors Association and the Food Industry Environmental Council. The objectives of the guidance are to reduce the level of effort expended by those facilities that prepare an EPCRA Section 313 report, and to increase the accuracy and completeness of the data reported on Form Rs or Form As by the food processing industry.

OPPT's *EPCRA Section 313 Reporting Guidance* is an essential, industry-specific compliance assistance tool. Acquiring it should be a high priority for environmental managers in the food processing industry. The following sections of this multimedia compliance guide briefly summarize, excerpt, or cross-reference text, tables and industry-specific examples found in OPPT's new guidance for food processors. Consult OPPT's guidance for the wealth of detailed industry-specific examples and the discussions of common reporting errors and compliance issues.

### 7.5.2 EPCRA Section 313 Reporting Requirements

To understand EPCRA 313 reporting requirements, you must first understand how EPCRA defines the terms, "facility" and "establishment." The term facility is defined as "all buildings, equipment, structures and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or is under common control with such person)." A facility may contain more than one "establishment." An "establishment" is defined as "an economic unit, generally at a single physical location, where business is conducted, or services or industrial operations are performed" (40 CFR 372.3).

#### **Common Error: Multi-Establishment Facilities and Agricultural Operations**

Some multi-establishment food processing facilities overlook the fact that they may have to submit Form R or Form A reports for chemicals used in agricultural operations. (See *EPCRA Section 313 Reporting Guidance* (9/98), pages 2-7 and 2-8 for further explanation.)

The following section briefly describes EPCRA Section 313 reporting requirements to help you determine if these requirements apply to your facility, and if yes, what kind of a report(s) (e.g., Form R or Form A) you should prepare. Note the standard report is Form R. However, to reduce the reporting burden for small businesses, EPA established an alternative threshold reporting level that is discussed later in this section. If your facility does not exceed this level and meets certain other criteria, then you may file Form A -- a Certification Form -- rather than Form R.

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How do you determine if your facility must prepare an EPCRA Section 313 report? The answers to the following four questions will help you decide:

- 1) Is the SIC Code for your facility included in the list covered by EPCRA Section 313 reporting?
- 2) Does your facility employ 10 or more full time employees or their equivalent?
- 3) Does your facility manufacture (which includes importation), process, or otherwise use EPCRA Section 313 chemicals?
- 4) Does your facility exceed any applicable thresholds of EPCRA Section 313 chemicals (either 25,000 pounds per year for manufacturing, or 25,000 pounds per year for processing, or 10,000 pounds per year for otherwise use)?

If you answer “**No**” to any of the first three questions, you are **not** required to prepare any Form R or Form A reports. If you answer “**Yes**” to **all** of the first three questions, you must then address question four. To address question four, you must do the following: a) complete a threshold calculation for each EPCRA Section 313 chemical at your facility; and then, b) for each EPCRA 313 chemical exceeding a threshold, you must submit a Form R or Form A.

To get a clearer picture of the decision making process, refer to Figure 7-1 *EPCRA Section 313 Reporting Decision Diagram*. (This diagram is identical to the one found in the *EPCRA Section 313 Reporting Guidance* (9/98), page 2-3.)

### Question 1: SIC Code Determination

Facilities with certain SIC codes are covered by EPCRA 313 reporting requirements. These include SIC Codes shown in the table below (40 CFR 372.22). For assistance in determining which SIC code(s) best suits your facility, based on the activities onsite, refer to *Standard Industrial Classification Manual*, 1987, published by the Office of Management and Budget.<sup>1</sup>

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<sup>1</sup>See *EPCRA Section 313 Reporting Guidance* (9/98), pages 2-4 and 2-5 for a discussion of SIC codes and codes of the North American Industry Classification System (NAICS). The NAICS is replacing the SIC system. Dual systems will be used for a transition period which began in 1997. The NAICS uses six digits (vs. four for the SIC) which allows for a finer division of industries in a larger economy. Additional information on the NAICS is available from the U.S. Census Bureau on <http://www.census.gov/epcd/www/naics.html>.

Figure 7-1. EPCRA Section 313 Reporting Decision Diagram

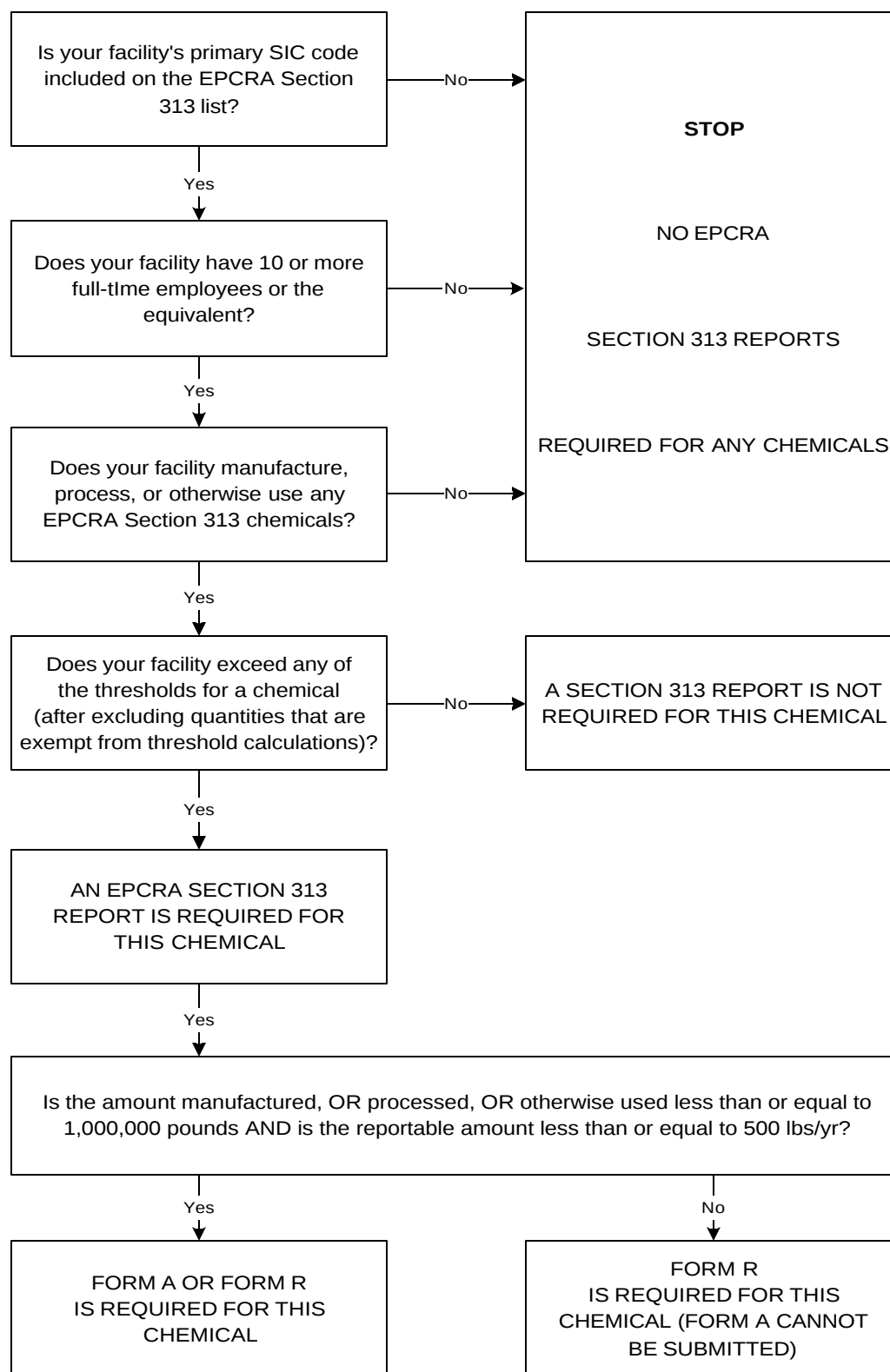


Table 7-2. SIC Codes Covered by EPCRA Section 313 Reporting

| SIC CODE MAJOR GROUPS |                                                       |                                                                                                                           |
|-----------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| SIC Codes             | Industry                                              | Qualifiers                                                                                                                |
| 10                    | Metal Mining                                          | Except SIC Codes 1011, 1081, 1094                                                                                         |
| 12                    | Coal Mining                                           | Except SIC Code 1241                                                                                                      |
| 20 through 39         | Manufacturing                                         | All SIC Codes                                                                                                             |
| 4911, 4931, and 4939  | Electric and Other Services and Combination Utilities | Limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce |
| 4953                  | Refuse Systems                                        | Limited to facilities regulated under RCRA Subtitle C                                                                     |
| 5169                  | Chemicals and Allied Products                         | None                                                                                                                      |
| 5171                  | Petroleum Bulk Stations and Terminals                 | None                                                                                                                      |
| 7389                  | Business Services                                     | Limited to facilities primarily engaged in solvent recovery services on a contract or fee basis.                          |

Most food processing facilities are in SIC Major Group 20 (a covered SIC code). If a food processing facility meets the employee and chemical activity thresholds in addition to being in a covered SIC code, it is required to prepare a Form R (or Form A) Report. If your facility has more than one SIC code (i.e., several establishments with different SIC codes are owned or operated by the same entity and are located at your facility), then you must determine what is the **primary** SIC code for your facility according to criteria set up under EPCRA Section 313 requirements. (See *EPCRA Section 313 Reporting Guidance* (9/98), pages 2-4 to 2-8.)

## Question 2: Number of Employees

If your facility has 10 or more full-time employees or the equivalent, you are required to report provided that your facility also is in a covered SIC code and meets the chemical activity threshold for any EPCRA Section 313 chemical. A full time employee equivalent is defined as a work year of 2,000 hours. Therefore, if your facility's employees aggregate 20,000 or more hours in a calendar year, you meet the employee criterion of "10 or more employees or the equivalent." Remember to include any part time and seasonal employees in your calculations, including workers on an adjacent farm that are part of the facility (40 CFR 372.22). (Refer to the example presented in the *EPCRA Section 313 Reporting Guidance* (9/98), page 2-10.)

### Question 3: Chemical Activity Categories

If you answered “Yes” to Questions 1 and 2 above, then you must determine which EPCRA Section 313 chemicals are “manufactured,” “processed,” or “otherwise used” at your facility. You should prepare a list of all chemicals used by **all** establishments at the facility, including the chemicals found in mixtures and trade name products. You should compare your list to the **current** list of EPCRA Section 313 chemicals found in the *TRI Forms and Instructions* for the reporting year.

OPPT has prepared the following table of EPCRA Section 313 chemicals commonly reported for the food processing industry. The table has two columns. The first column lists the industrial process (water treatment, refrigerant uses, reactants, catalysts, etc.), and the second column lists examples of EPCRA Section 313 chemicals reported by this industry. This list is not all inclusive; therefore, you should use it only as a guide. (This table is identical to Table 2-3 in the *EPCRA Section 313 Reporting Guidance* (9/98), page 2-11.)

Table 7-3. EPCRA Section 313 Chemicals Commonly Encountered in Food Processing

| Process                     | Chemicals                                                                                                                                                             |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Water Treatment             | Chlorine and chlorine dioxide                                                                                                                                         |
| Refrigerant Uses            | Ammonia, ethylene glycol, Freon 113, dichlorodifluoromethane, CFC-114, chlorodifluoromethane                                                                          |
| Food Ingredients            | Phosphoric acid, various food dyes, various metals (e.g. zinc, copper, manganese, selenium, metal compounds) and peracetic acid                                       |
| Reactants                   | Ammonia, benzoyl peroxide, chlorine, chlorine dioxide, ethylene oxide, phosphoric acid, propylene oxide                                                               |
| Catalysts                   | Nickel and nickel compounds                                                                                                                                           |
| Extraction/Carrier Solvents | n-Butyl alcohol, dichloromethane, n-hexane, phosphoric acid, cyclohexane, and tert-butyl alcohol                                                                      |
| Cleaning/Disinfectant Uses  | Chlorine, chlorine dioxide, formaldehyde, nitric acid, phosphoric acid, and 1,1,1-trichloroethane                                                                     |
| Wastewater Treatment        | Ammonia, hydrochloric acid aerosols, and sulfuric acid aerosols                                                                                                       |
| Fumigants                   | Bromomethane, ethylene oxide, propylene oxide, and bromine                                                                                                            |
| Pesticides/Herbicides       | Various pesticides and herbicides (e.g., aldrin, captan, 2, 4-D, hydrazine, lindane, maneb, parathion, zineb, malathion, atrazine, diazinon bromine, and naphthalene) |

Table 7-3. EPCRA Section 313 Chemicals Commonly Encountered in Food Processing (continued)

| Process            | Chemicals                                                                                                                                                                                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Byproducts         | Ammonia, chloroform, methanol, hydrogen fluoride, and nitrate compounds                                                                                                                                                                                                  |
| Can Making/Coating | Various ink and coating solvents (e.g. glycol ethers, MEK, toluene, methyl isobutyl ketone, xylene), various listed metals (e.g. manganese, nickel, chromium), and various metal pigment compounds (e.g., many pigments contain copper, barium, chromium, zinc, or lead) |

### Question 4: Threshold Determinations

After you identify the EPCRA Section 313 chemicals at your facility, then you must evaluate the activities involving each chemical, and determine if any of these activities meet any of the activity thresholds. EPCRA Section 313 reporting requirements define three activity categories for each EPCRA Section 313 chemical. These include “manufacturing” (which includes importing), “processing”, and “otherwise using.”

Brief definitions for the manufacturing (including importation), processing, and otherwise using appear in the table below. (This table is identical to Table 2-4 in the *EPCRA Section 313 Reporting Guidance (9/98)*, pages 2-12 and 2-13.)

The EPCRA Section 313 requirements divide each of these activity categories into subcategories. OPPT's guidance discusses each category and subcategory of activity along with relevant examples from the food processing industry. For more information, refer to the tables in Chapter 3 of the *EPCRA Section 313 Reporting Guidance (9/98)*, pages 3-8, 3-9 and 3-10. These tables are,

Table 3-2 Definitions and Examples of Manufactured Chemicals

Table 3-3 Definitions and Examples of Processed Chemicals

Table 3-4 Definitions and Examples of Otherwise Used Chemicals.

Table 7-4. Activity Categories

| Activity Category | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Manufacture       | To produce, prepare, import, or compound a toxic chemical. "Manufacture" also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, otherwise use, or disposal of another chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity during the manufacturing, processing, or otherwise use or disposal of any other chemical substance or mixture. An example would be the production of ammonia or nitrate compounds in a wastewater treatment system.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25,000 |
| Process           | To prepare a listed EPCRA Section 313 chemical, or a mixture or trade name product containing an EPCRA Section 313 chemical, for distribution in commerce (usually the intentional incorporation of an EPCRA Section 313 chemical into a product). For example, zinc compounds may be processed as an additive in dog food, and would have to be reported if you exceeded the reporting threshold. Processing includes the preparation for sale to your customers (and transferring between facilities within your company) of a chemical or formulation that you manufacture. For example, if you manufacture a chemical or product, package it, and then distribute it into commerce, this chemical has been manufactured AND processed by your facility.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 25,000 |
| Otherwise Use     | <p>Generally, use of a listed EPCRA Section 313 chemical that does not fall under the Manufacture or Process definitions is classified as Otherwise Use. A listed chemical that is Otherwise Used is not intentionally incorporated into a product that is distributed in commerce, but may be used instead as a manufacturing or processing aid (e.g., catalyst), in waste processing, or as a fuel (including waste fuel). For example, n-butyl alcohol used as a carrier solvent for spices is classified as Otherwise Used.</p> <p>On May 1, 1997 U.S. EPA revised the interpretation of "otherwise use". The following new "otherwise use" definition becomes effective with the 1998 reporting year (62 FR 23834, May 1, 1997). Otherwise use means "any use of a toxic chemical contained in a mixture or other trade name product or waste, that is not covered by the terms "manufacture" or "process." Otherwise use of a toxic chemical does not include disposal, stabilization (without subsequent distribution in commerce), or treatment for destruction unless:</p> <ol style="list-style-type: none"> <li>1) The toxic chemical that was disposed, stabilized, or treated for destruction was received from off site for the purposes of further waste management; OR</li> <li>2) The toxic chemical that was disposed, stabilized, or treated for destruction was manufactured as a result of waste management activities on materials received from off site for the purposes of further waste management activities."</li> </ol> | 10,000 |

Associated with each activity category is an activity threshold summarized in the next table. These thresholds have been in effect since the reporting year of 1989. The activity thresholds apply to each EPCRA Section 313 chemical. Note that the threshold determination for each of the three activity categories is mutually exclusive of the others. Therefore, you must conduct a separate threshold determination for each chemical for each activity category. If you exceed any one of the activity thresholds, then you must submit a Form R (or Form A) report.

Table 7-5. EPCRA Section 313 Reporting Activities/Thresholds

| Chemical Activity | Activity Threshold |
|-------------------|--------------------|
| Manufacturing     | 25,000 pounds/year |
| Processing        | 25,000 pounds/year |
| Otherwise Use     | 10,000 pounds/year |

The threshold determination is based **solely** on the quantity **actually** manufactured (including imported), processed, or otherwise used, **not** on the quantity of chemicals stored onsite or purchased. Therefore, EPCRA Section 313 chemicals that are bought and stored, but are not incorporated into a product for distribution **or** not otherwise used onsite during the reporting year, are not counted towards any activity thresholds.

Many EPCRA Section 313 chemicals are present as impurities or as small components of mixtures. These quantities must also be considered in threshold determinations unless the concentration is below the *de minimis* value. In some cases, if a chemical is present below *de minimis* concentration, it may be exempt. See OPPT's guidance (9/98), pages 3-10 to 3-18, for more information on how to evaluate *de minimis* and three other classes of exemptions, including article, facility-related, and activity-related exemptions.

Several chemicals on the EPCRA Section 313 chemical list include qualifiers related to use or form (e.g., fume or dust, solutions, acid aerosols, etc.). Some chemicals are reportable **only if** manufactured by a specific process or in a specified activity category. OPPT's *EPCRA Section 313 Reporting Guidance* (9/98), pages 3-5 to 3-8, contains an industry-specific discussion of these qualifiers, the associated chemicals and how these typically apply to the food processing industry. A detailed discussion of the qualifier criteria can be found in the *TRI Forms and Instructions*.

To determine if a chemical exceeds a reporting threshold, you must calculate the annual activity usage of that chemical. For example, start with the amount of the chemical at the facility as of January 1; add any purchases during the year and the amount manufactured (included imported); and subtract the amount left in the inventory on December 31. If necessary, adjust the total to account for exempt activities. Then compare the result to the appropriate activity threshold to determine if you are required to submit an EPCRA Section 313 Form R report for that chemical. OPPT's guidance (pages 3-22 and 3-23) provides a blank worksheet and a sample illustration to assist you with threshold calculations.

### 7.5.3 How to Estimate Releases and Other Waste Management Amounts

You must file a Form R report for **each** EPCRA Section 313 chemical if that chemical exceeds any activity threshold for manufacturing, **or** processing, **or** otherwise use (provided that you also meet the SIC code and employee criteria). However, you may be eligible to file a Form A certification statement, rather than a Form R, provided that you meet certain criteria described below.

The Form R consists of the following two parts:

Part I, Facility Identification Information. Except for the signature, this part may be photocopied and re-used for each Form R you submit. Each Form R must have an original signature.

Part II, Chemical Specific Information. You must complete this part separately for each EPCRA Section 313 toxic chemical or chemical category. Among other items of information in Part II, you must provide the total annual reportable amount. The **reportable amount** is defined as the sum of the onsite amounts released (including disposal), treated, combusted for energy recovery and recycled, combined with the sum of the amounts transferred offsite for recycling, energy recovery, treatment, and/or release (including disposal). This total corresponds to the total of data elements 8.1 through 8.7 on the 1997 version of the Form R. Note: You **cannot** re-use this portion year after year, even if reporting has not changed.

The Form A, also referred to as the "Certification Statement," is an alternative to Form R. Form A first became available in reporting year 1994. EPA developed Form A (59 FR 61488, November 1994) to reduce the annual reporting burden for facilities that meet both of the following criteria:

- Chemical Activity Thresholds: The amount of the EPCRA Section 313 chemical manufactured, or processed, or otherwise used must not exceed one million (1,000,000) pounds. [Note: The threshold determination for each activity category is mutually exclusive of the others; i.e., each threshold must be evaluated independently. Therefore, if the quantity for any one activity threshold **exceeds 1,000,000 pounds**, then your facility **cannot** submit Form A.]

**And**

- Annual Reportable Amount: The total annual reportable amount of the EPCRA Section 313 chemical **cannot exceed five hundred (500) pounds** per year. As stated above, the **reportable amount** is defined as the sum of the on site amounts released (including disposal), treated, combusted for energy recovery and recycled, combined with the sum of the amounts transferred off site for recycling, energy recovery, treatment, and/or release (including disposal). This

total corresponds to the total of data elements 8.1 through 8.7 on the 1997 version of the Form R.

The Form A Certification Statement must be submitted for each eligible EPCRA Section 313 chemical. Like the Form R, Form A includes facility identification information. However, Form A does not require your facility to report any estimate of releases and other waste management quantities. Rather, your facility must simply certify that the total annual reportable amount does not exceed 500 pounds for that particular chemical.

For industry-specific assistance in calculating reportable amounts, consult Chapter 4 “Estimating Releases and Other Waste Management Quantities” of OPPT’s *EPCRA Section 313 Reporting Guidance* (9/98). This chapter provides a detailed, step-by-step discussion of how to calculate the release and other waste management amounts for any Section 313 chemical for which your facility must submit a report. This procedure consists of:

- Preparation of a detailed process flow diagram;
- Identification of potential sources of toxic chemicals released and/or otherwise managed;
- Identification of the potential types of releases and/or other waste management activities from each source; and
- Determination of the most appropriate method(s) for estimating the quantities of listed toxic chemicals and/or other waste management activities.

Chapter 4 of OPPT’s guidance also briefly analyzes twelve chemical use categories commonly found in the food processing industry. For each of these twelve categories, the guidance does the following: lists the commonly used EPCRA Section 313 chemicals; gives an overview of the process involved; identifies the appropriate chemical activity category(ies) and reporting thresholds; describes methods for estimating quantities of chemicals released and otherwise managed as waste; and discusses common reporting errors.

Consult *TRI Forms and Instructions* for detailed directions on how to prepare and submit a Form R or a Form A report for **each** listed EPCRA Section 313 chemical. You have the option of submitting Form R(s) electronically via EPA’s Automated Toxic Chemical Release Inventory Reporting Software (ATRS). EPA encourages the use of ATRS to save you time in data entry and photocopying, and to reduce errors by means of the online validation routines and use of pick lists within the software.

The ATRS can be found on the Internet at <http://www.epa.gov/opptintr/atrs>. It is available in both DOS and Windows versions. Call the ATRS User Support Hotline at 703-816-4434 for more information.

### 7.5.4 EPCRA Section 313 Recordkeeping

Complete and accurate records are absolutely essential to meaningful compliance with EPCRA Section 313 reporting requirements. Compiling and maintaining good records will help you to

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reduce the effort and cost in preparing future reports, and to document how you arrived at the reported data in the event of an EPA compliance audit. EPA requires you to maintain records substantiating the Form R or Form A submission, for a minimum of three years. Each facility must keep copies of the Form R or Form A along with all supporting documents, calculations, work sheets, and other forms that you use to prepare the Form R or Form A. EPA may request this supporting documentation during a regulatory audit.

Specifically, EPA requires that the following records must be maintained for a period of three years from the date of the submission of a report (summarized from 40 CFR 372.10):

- 1) A copy of each report that is submitted.
- 2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishment is a covered facility.
- 3) Documentation supporting the report that is submitted, including documentation supporting:
  - C Claimed allowable exemptions;
  - C Threshold determinations;
  - C Calculations for each quantity reported as being released, either on or off site, or otherwise managed as waste;
  - C Activity use determinations, including dates of manufacturing, processing, or use;
  - C The basis of all estimates;
  - C Receipts or manifests associated with transfers to off-site locations; and
  - C Waste treatment methods, treatment efficiencies, ranges of influent concentrations to treatment, sequential nature of treatment steps, and operating data to support efficiency claims.
- 4) All supporting materials used to make the compliance determination that the facility or establishment is eligible to submit a Form A.
- 5) Documentation supporting the Form A, including:
  - C Data supporting the determination that the alternate threshold applies;
  - C Calculations of annual reporting amounts; and
  - C Receipts or manifests associated with the transfer of each chemical in waste to offsite locations.

Because EPCRA Section 313 reporting does not require additional testing or monitoring, you must determine the best readily available source of information for all estimates. Some facilities may have detailed monitoring data and offsite transfer records that are used for estimates, while others may only use purchase data and inventory records. Examples of records that you should keep, if applicable, might include:

- C Each Form R or Form A submitted;
- C EPCRA Section 313 Reporting Threshold Worksheets (sample worksheets can be found in Chapter 3 of this document as well as in the *TRI Forms and Instructions*);

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- C Engineering calculations and other notes;
- C Purchase records from suppliers;
- C Inventory data;
- C National Pollutant Discharge Elimination System (NPDES)/State Pollutant Discharge Elimination System (SPDES) permits and monitoring reports;
- C EPCRA Section 312 Tier II reports;
- C Monitoring records;
- C Air permits;
- C Flow measurement data;
- C RCRA hazardous waste generator's reports;
- C Pretreatment reports filed with local governments;
- C Invoices from waste management firms;
- C Manufacturer's estimates of treatment efficiencies;
- C Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) reportable quantity (RQ) reports;
- C RCRA manifests; and
- C Process flow diagrams (including emissions, releases, and other waste management activities).