

CHAPTER 2

IMPORTANT TERMS

In This Chapter:

- Emission Unit
- Rule 201 Exempt Emission Unit
- Source
- Reporting Group
- Source Classification Code (SCC)



CHAPTER 2: Important Terms

- A **process** is a piece of equipment or activity that generates air contaminants, such as a boiler, degreaser, or an unpaved roadway.
- A **control device** is a piece of equipment or a practice that collects, destroys, or minimizes the release of air contaminants, such as a baghouse, afterburner, or calcium chloride application to control fugitive dust.
- A **stack** is simply a conduit for the air contaminants.

EMISSION UNIT

Facilities may have hundreds or even thousands of process devices on site. It would be difficult for these facilities to report emissions of air contaminants from each individual process device. To simplify the reporting of air contaminants from all these devices, the AQD has introduced the concept of the emission unit. Facilities are required to report their emissions of air contaminants in MAERS by emission unit. An emission unit contains at least one process device, zero or more control devices, and zero or more stack devices.

The AQD's Operational Memorandum No. 6 explains how a facility should organize its devices into the proper emission unit groupings (to obtain a copy of Operational Memorandum No. 6, go to www.michigan.gov/deqair). One way of identifying your facility's emission units is to first identify all of your facility's devices on a large piece of paper. Then draw circles around the devices according to the following steps. All devices contained within a circle represent one emission unit. Remember to apply the steps in the order below to properly identify your emission units.

- **Step 1** – Circle the process devices and control devices that are identified in a state or federal regulation. Regulations can be applicable to a single process device with or without control devices (e.g., Rule 611 – cold cleaner) or multiple process devices with or without control (e.g. Rule 621 – coating line). Each circle represents an emission unit.
- **Step 2** – For the remaining devices that are not included in an emission unit, put a circle around those process devices that are connected to a control device or controlled by the same work practice or control strategy. Include the control device in the circle (e.g., three non-production welding stations controlled by one cartridge filter). Each circle represents an emission unit.
- **Step 3** – For the remaining devices that are not included in an emission unit, put a circle around those process devices that are functionally dependent (e.g., paint manufacturing consisting of dispersion mills and mixing tanks). Each circle represents an emission unit.
- **Step 4** – The remaining devices that are not circled should be uncontrolled devices that operate independently and are not subject to a specific regulation. Put a circle around each device (e.g., three non-production welding stations without control – put a circle around each one separately). Each circle represents an emission unit.

To help clarify the concept of emission units, let's go through a couple of examples.

Example 1: A facility operates a wood coating line and a plastic coating line with a shared oven, incinerator, and stack (see Figure 2-1). Each coating line is regulated under different state VOC rules. How many emission units are present?

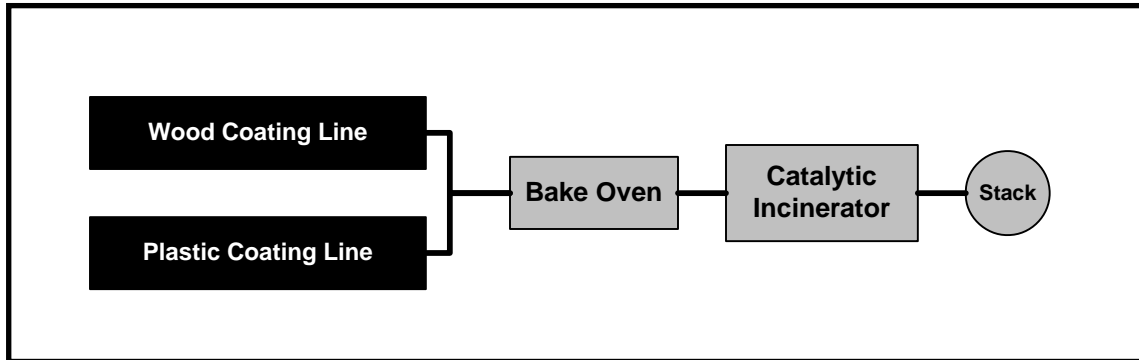


Figure 2-1: Emission unit example one

There are two emission units. Since there is a state VOC rule that applies to each coating line, each one is its own emission unit (see step 1). The definition of “coating line” in the regulations includes applicators, flash-off areas, drying areas, and ovens. Figure 2-2a shows that one emission unit consists of the wood coating line, the bake oven, the catalytic incinerator, and all related stacks. The other emission unit, displayed in Figure 2-2b, consists of the plastic coating line, the bake oven, the catalytic incinerator, and all related stacks.

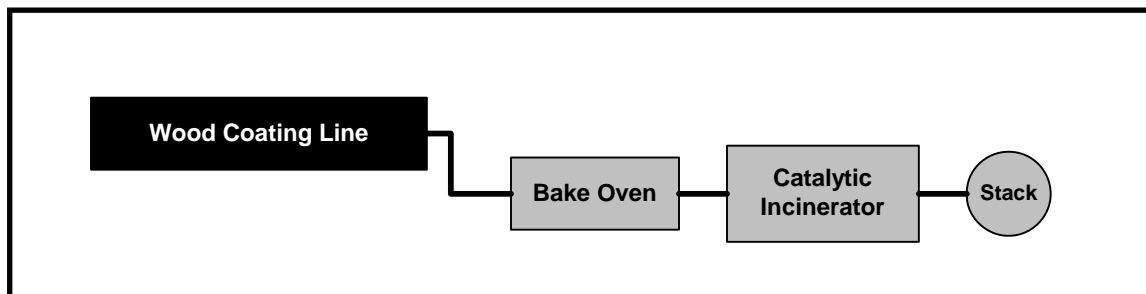


Figure 2-2a. The first emission unit from example one

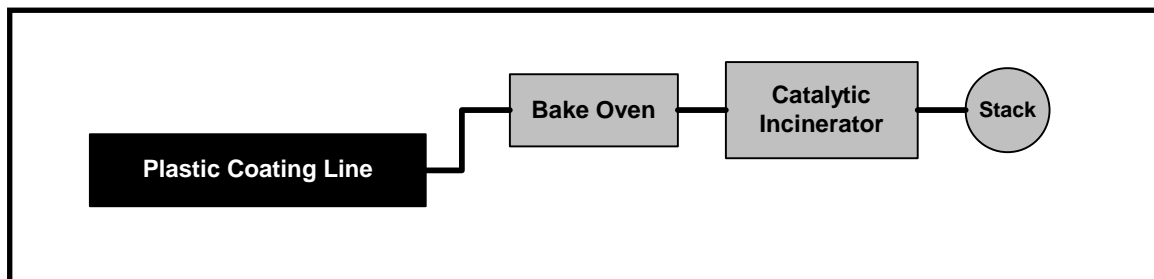


Figure 2-2b: The second emission unit from example one

Example 2: A facility operates two boilers that share an electrostatic precipitator and exhaust through the same stack (see Figure 2-3). Each boiler is subject to a New Source Performance Standard (NSPS). How many emission units are present in this example?

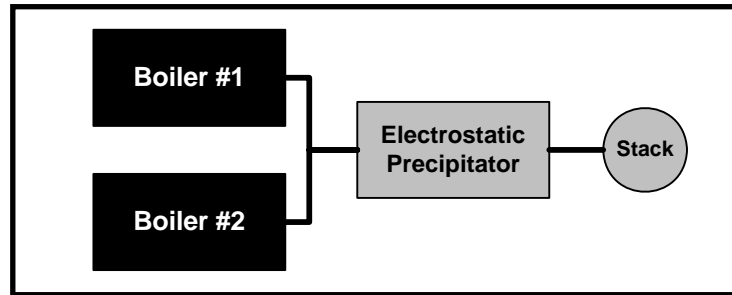


Figure 2-3: Emission unit example two

Again, there are two emission units. Remember, in step 1 the regulation dictates the emission grouping. Each boiler is subject to the NSPS; the NSPS applies to one boiler, not to a group of boilers. Therefore, there are two emission units. Figure 2-4a shows that one emission unit consists of boiler #1, the electrostatic precipitator, and the stack. The other emission unit, as displayed in Figure 2-4b, consists of boiler #2, the electrostatic precipitator, and the stack.

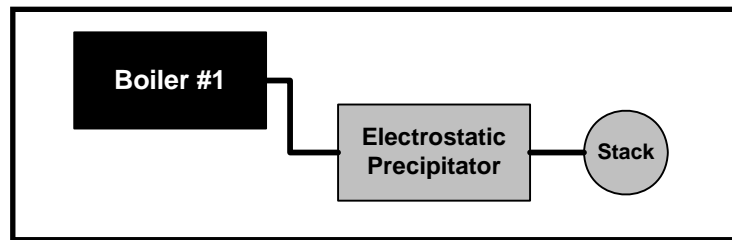


Figure 2-4a: The first emission unit from example two

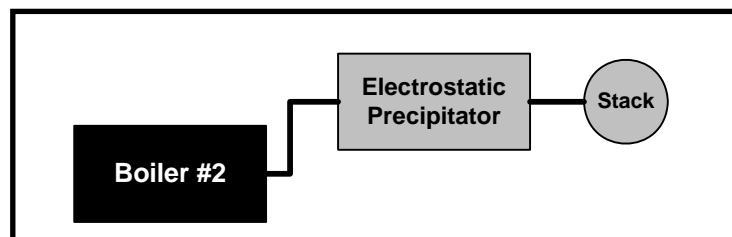


Figure 2-4b: The second emission unit from example two

Example 3: A conveyer passes metal parts through a degreaser and a coating line (Figure 2-5). How many emission units are present?

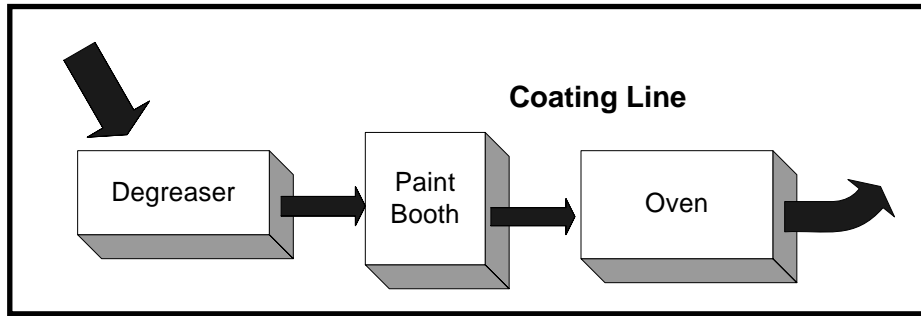


Figure 2-5: Emission unit example three

There are two emission units. The degreaser and the coating line are each subject to different regulations (see step 1). Therefore, the degreaser is one emission unit, and the coating line (consisting of the paint booth and oven) is another emission unit.

Remember, an easy approach to identifying all the emission units at a facility is to get the building layouts that include all process devices, control devices, and stacks. After reviewing the regulations for the facility, circle devices that belong to each emission unit. Figure 2-6 shows a plant layout for XYZ Manufacturing Company. Each emission unit is circled. Notice that some devices and stacks belong to more than one emission unit. Each cold cleaner is a separate emission unit since there is a state rule that regulates individual cold cleaners (see step 1). The grinders are together in one emission unit since there is no applicable requirement for grinding operations, and the grinders are connected to a common control device (see step 2).

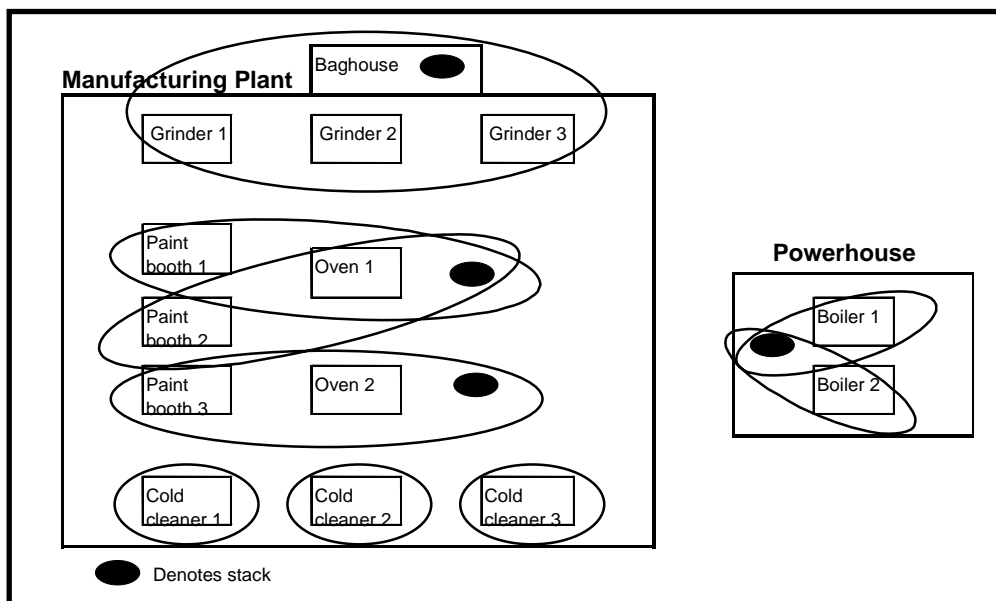


Figure 2-6: Building layout for XYZ Manufacturing Company showing emission units

SOURCE

A source is a collection of buildings and structures containing emission units. A source may be stationary (e.g., an Auto Assembly Plant) or portable (e.g., an asphalt plant). Your source is Identified by its state registration number (SRN). An SRN is a letter followed by four numbers (e.g., N1234) and can be found on all your permits and correspondence with the DEQ's Air Quality Division.

RULE 201 EXEMPT EMISSION UNIT

Rule 201 of the Michigan Air Pollution Control Rules requires that a Permit to Install be obtained prior to the installation, construction, or modification of a source of air contaminants or any emission unit. An emission unit is considered “**Rule 201 exempt**” (i.e., not subject to Rule 201) if it meets all of the following:

- The emission unit is identified in one of the rules that exempt insignificant sources of air contaminants from having to obtain a Permit to Install under (i.e., Rules 280 through 290 of the Michigan Air Pollution Control Rules, see Appendix C).
- The emission unit is not subject to Rule 278 (see Appendix C for the rule). If an emission unit will result in a significant net emission increase as defined in Rule 278, the permit exemptions in Rules 280-290 do not apply. In other words, the facility must apply for a Permit to Install. Contact the Environmental Assistance Program (800) 662-9278 if you need more information about Rule 278.

REPORTING GROUP

A reporting group is an optional grouping of emission units. Creating reporting groups is not required; not every facility will have reporting groups in its MAERS report. Reporting groups are created for simplification of reporting emissions for a group of emission units that have common activities. For example, consider a facility that has a Permit to Install for multiple emission units. The permit limits the combined emissions of the multiple emission units. It would be very difficult to report emissions at the emission unit level for this situation because records are not kept at the emission unit level. Therefore, a reporting group consisting of all the relevant emission units can be created, and the emissions can be reported for the reporting group instead of for each individual emission unit.

For an example of a reporting group, consider three coating lines that are each a separate emission unit (see Figure 2-7). If the company kept records for all three lines combined, it would be easier to report emissions for all three lines combined instead of at the emission unit level. The three emission units can be combined into a single reporting group and the emissions can be reported for the combination of the lines instead of for each one individually.

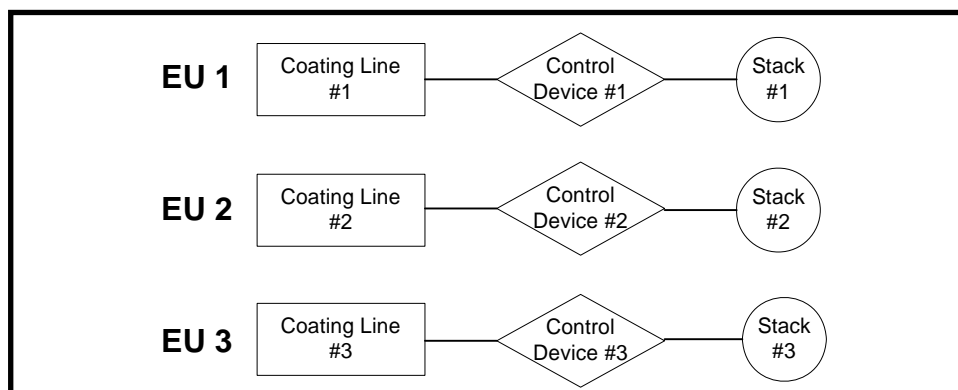


Figure 2-7:
Reporting group
example

SOURCE CLASSIFICATION CODE (SCC)

A Source Classification Code (SCC) describes an air polluting activity and links the activity to an “approved” emission factor. Approved emission factors are either contained in the MAERS Emission Factor Table, derived from the Factor Information Retrieval System (FIRE) or the U.S. EPA’s *Compilation of Air Pollutant Emission Factors (AP-42)*. The MAERS Emission Factor Table can be accessed from the MAERS software under the **Utilities** menu. Both FIRE and AP-42 can be accessed via the Internet at www.epa.gov/ttn/chief/efpac/index.html.

The SCC is an eight-digit, numeric code that characterizes an air polluting activity by source type; device type; related raw material, fuel, or product; control device; and release location and type. The code is divided into four fields that represent the categories shown in Figure 2-8 below.

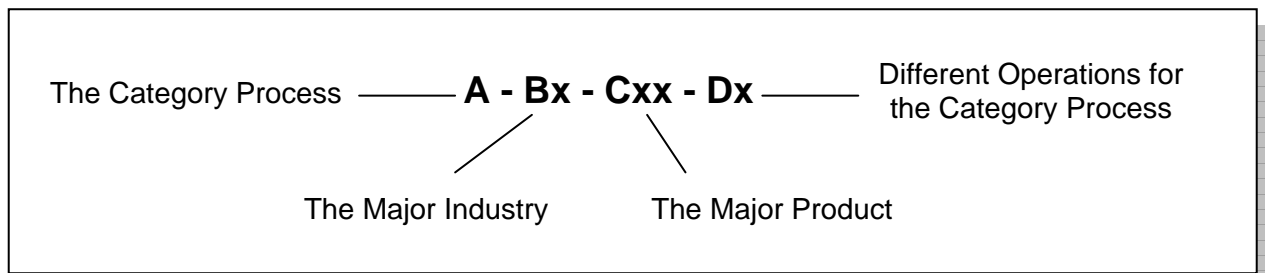


Figure 2-8: SCC Structure

For example, the manufacturer of polyethylene is represented by several SCCs: 3-01-018-60 through 3-01-018-66. These fields include:

- Manufacturing Operations (3);
- Chemical Manufacturing (-01);
- Plastics Production (-018); and
- Recovery system (polyethylene) (-60), purification system (-61), extruder (-65), and packing/shipping (-66).

However, the manufacture of epoxy resins is represented in the SCC system by only one SCC, 3-01-018-47, with the fields:

- Manufacturing Operations (3);
- Chemical Manufacturing (-01);
- Plastics Production (-018); and
- Epoxy resins (-47).

Finding SCCs in MAERS

SCCs must be entered onto the MAERS A-101 form for each emission unit or reporting group reported on the EU-101 and RG-101 forms. To identify an SCC in MAERS for a particular emission unit or reporting group, use the **SCC Lookup Table** located in the MAERS software. To access this table, go to **Utilities** on the menu bar and select **SCC Lookup**. The SCC table will appear as shown in Figure 2-9.

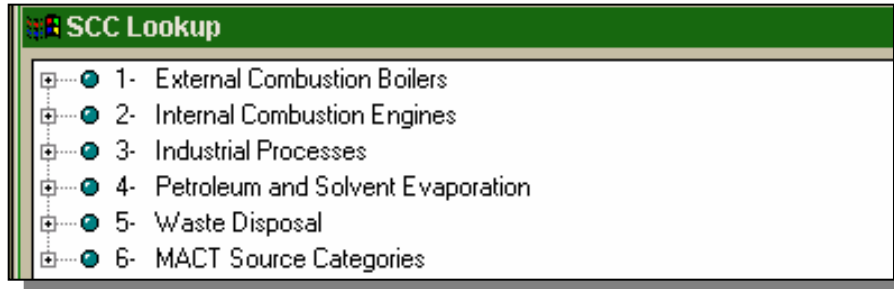


Figure 2-9: SCC Lookup Table

As discussed previously, SCCs are identified by 4 levels of descriptions. When the SCC Lookup window first opens, the first level of descriptions appears in a “tree view” presentation. Expand to the second level by either clicking on the plus (+) sign or by double-clicking on a first level description. You will notice the SCC building itself as you expand deeper into the tree. You can then get to the third and fourth levels via the same navigation method. The fourth (and last) level gives you the complete SCC Code for the combination of the 4 levels. If the SCC Code has an associated material code or unit code, the material/unit code will appear in the 4th level next to the SCC description. If a material code is not associated with the SCC, the phrase **“NO MATERIAL”** will appear.

To help clarify the SCC Lookup, let’s go through an example. This example is for a natural gas-fired boiler with a rated heat input capacity of 20 million BTU/hr. To find the SCC, we need to follow the steps below.

1. From the SCC Lookup table identify the category process. In our example we would look under “External Combustion Boilers” (1-). Click on the “+” to expand the table as shown in Figure 2-10.

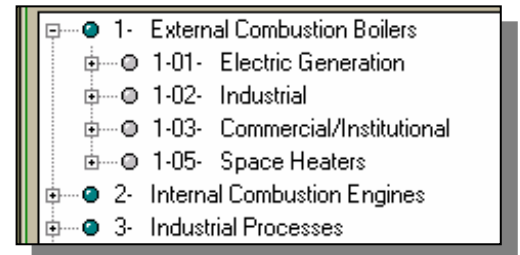
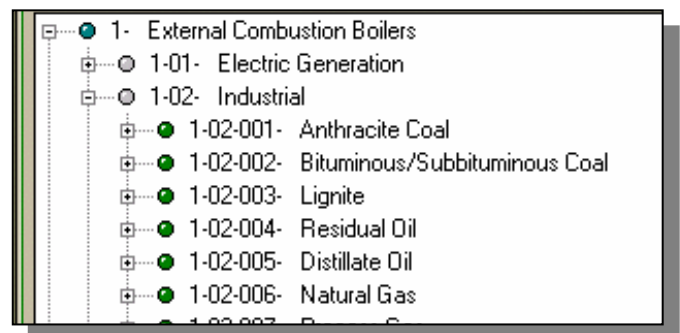


Figure 2-10: SCC Lookup Table First Expansion

2. From the expanded list choose the next category that best characterizes this emission unit. In our example, this boiler is for industrial use so we would select “Industrial” (1-02-). Click on the “+” and the list will expand again as shown in Figure 2-11.



3. From this expanded list choose the next category that best represents the activity occurring at this emission unit. For our example, we must choose a fuel type. This is a natural gas fired boiler, so we would choose “Natural Gas” (1-02-006-). Click on the “+” and the list will expand again as shown in Figure 2-12.

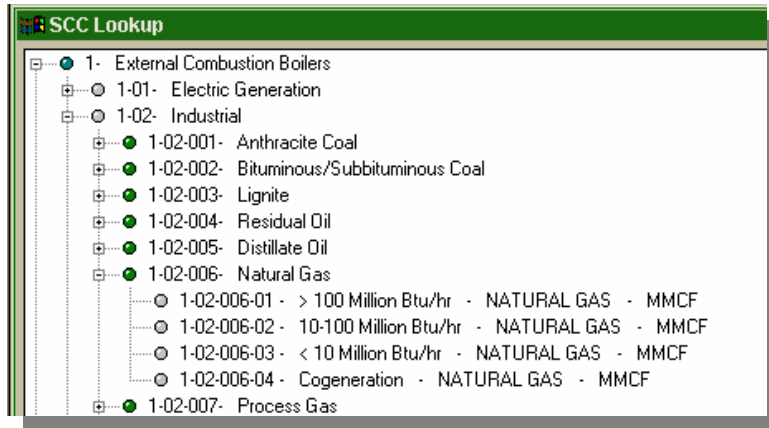


Figure 2-12: SCC Lookup Table Third Expansion

4. Note that the list now displays an entire SCC consisting of eight-characters. Choose the one that best describes the activity. In our example, this boiler has a heat input capacity of 20 million Btu/hr; therefore, we would choose “10-100 Million Btu/hr – NATURAL GAS – MMCF.” The SCC is “1-02-006-02.”
5. On the A-101 form, for this emission unit, you would select “1-02-006-02” from the list of SCCs available in the SCC field. Notice that when you select this SCC, the MAERS software automatically fills in the Material Code field and Unit Code field. This occurs because there is a material and unit code associated with the SCC – “NATURAL GAS – MMCF.”