CHAPTER 2—CREATING AN INITIAL EMISSIONS INVENTORY

This chapter explains the EI process, including how to prepare an EI for the first time, and defines key terms associated with this process. For any unfamiliar term or concept, please consult the Glossary, or contact the EAS for assistance.

The Emissions Inventory Process

The EAS annually collects statewide data on emissions from industries that meet the EI reporting requirements and stores those data in its database, the State of Texas Air Reporting System (STARS). An EI is the result of a process the EAS uses to collect data on standardized forms to ensure consistency among types of data collected, and to facilitate data entry into and retrieval from STARS. The data collected identify the company, site, point of contact, emission source, abatement device, emission point, and path emissions.

Every EI is currently identified with and indexed by a site-specific air regulated entity reference number, a unique identification number assigned by the TCEQ. A site's air regulated entity reference number will thus also uniquely identify its EI.

Requirements for Submitting an Emissions Inventory

The TCEQ requires emissions inventories from regulated entities that satisfy the applicability requirements (also called *reporting requirements*), as set forth in 30 TAC 101.10.

The reporting requirements for emissions inventories will vary, depending on both:

- site location and
- the type and quantity of emissions.

The *attainment status* of the county where the regulated entity is located will impact the emissions inventory reporting requirements that concern both emissions type and quantity. Specifically, the county's attainment status for a particular pollutant will affect both the **potential** and **actual** emissions level reporting requirements for this pollutant. Thus, a regulated entity located in a county designated in nonattainment for ozone will be subject to more stringent potential and actual emissions level reporting requirements for ozone-precursor pollutants than a regulated entity located in a county designated as in attainment for ozone.

The term *actual emission* is defined in 30 TAC 101.10 as the actual rate of emissions of a pollutant from an emissions generating source, or *unit*, as the pollutant enters the atmosphere. Potential emissions from a specific unit are referred to as its *potential to emit*. Potential to emit is defined in the Glossary as well as 30 TAC 122.10. Note that, while both actual and potential emissions are defined above in relation to an emissions generating source or unit, the emissions inventory reporting requirements concerning actual and potential emissions are **site-wide**.

The owner or operator of the regulated entity must determine the attainment status of the county where the site is located. The map in Chapter 1 contains a table that gives the EI reporting requirements by listing the actual and potential emissions levels for all counties in Texas. For more information, consult the text of 30 TAC 101.10 in Chapter 1.

Note the map and associated table are intended to clarify reporting requirements and do not supersede or replace 30 TAC 101.10. To determine both the actual and potential emissions level reporting requirements for a specific county, consult 30 TAC 101.10.

The owner or operator of a regulated entity must identify every emissions source present at the site. For additional information consult both this chapter and “Identifying Emissions Sources” in Chapter 3. After identifying all of the emissions sources at the site, the owner or operator must determine each source’s actual and potential emissions. To determine the quantity and type of actual and potential emissions, consult Chapter 4. Finally, the total actual annual emissions, as well as the potential emissions, for the entire site will need to be calculated.

Based on the reporting requirements associated with the site’s location and the actual and potential emissions, the owner or operator must determine whether submission of an EI is required. If so, the preparer must report the actual annual emissions on the standardized EI forms. Representing sources within the emissions inventory is termed *emissions inventory structure* and it is explained in the following section.

Understanding Emissions Inventory Structure

The EI is used to report the quantities of emissions at a site. This information on emissions, which is entered into STARS, is not just associated with a site’s regulated entity reference number, but is specifically tied to individual sources. Associating emissions to a particular source in this manner assures the quality of data, and enhances statewide emissions modeling.

The way the EI ties emissions data to particular emissions sources is called *structure*. In other words, structure aids in the translation of the

emissions-generating equipment and processes onto paper forms. The key concepts associated with structure are discussed in the following sections.

Facilities and Emission Points

In EI terminology, any source capable of generating emissions (for example, an engine or a sandblasting area) is called a *facility*. Thus, *facility* and *emissions source*, or "source" for short, are synonymous.

The actual physical location where the emissions enter the atmosphere (for example, an engine stack or a sandblasting yard) is called an emission point. Emission points are currently classified into three different types:

- *stack-type* emission points, such as boiler stacks or building vents;
- *fugitive-type* emission points, such as sandblasting yards or marine loading areas;
- and *flare-type* emission points that only include flares.

Thus, an emission point's type can range from a smaller, more precise location (such as a glycol still vent) to a larger, wider area (such as an outdoor lot where surface-coated metal pieces finish drying).

For EI purposes, every facility (emissions source) must be linked to at least one emission point, and vice versa; this allows the inventory to capture the maximum amount of data about a source. For example, an internal combustion engine with one stack is represented as the facility and emissions point, respectively.

The engine's burn type and design capacity will be captured in the facility data, and the stack height, diameter, exhaust exit velocity, and exhaust temperature will be captured in the emission point data.

Paths

As stated in the previous section, every facility must be linked to at least one emission point. This association of one facility to one emission point is termed a *path*. A path essentially traces an air pollutant's origination, from its creation by the facility to its entrance into the atmosphere via the emission point. If a control device is involved, the path traces an air pollutant's origination, from its creation by the facility, to its abatement by the control device, to its entrance into the atmosphere via the emission point.

It is important to note that a path represents **one** facility linked to **one** emission point; in other words, a path traces **only one** route a facility's emissions travel to reach the atmosphere. If one facility is linked to **more than one** emission point, then multiple paths exist. For example, if a paint booth has three exhaust vents, then three different paths exist, since there

are three different routes the facility's (source's) emissions can travel to enter the atmosphere.

Thus, when actual emissions data are reported in the EI, the data will be associated with a path—in other words, the emissions data will be associated with the facility (emissions source) that created the emissions, and the point where they entered the atmosphere. If a control device is involved, it will also be associated with the path.

The site's EI will consist of a collection of paths that will allow for the submission of detailed emissions data, as well as detailed facility and emission point characteristics. These collective paths, facilities, emission points, and any associated control devices will form the *EI structure*.

These key elements of EI structure are important because they allow emissions data to be tied to specific sources. Chapter 3 discusses in detail how to establish the EI structure.