

using emissions factors based on general information instead of site-specific data. If an inappropriate safety factor (see discussion to follow) is used in calculating site-specific emissions, and the factors change, your estimate of PTE may be lower than the actual level. This could result in your facility being determined to be in noncompliance with one or more applicable requirements. It is your responsibility to accurately establish your facility's emissions levels.

### Other Methods

A **material balance approach** also may provide reliable average emission estimates for specific sources. If you know how much material enters a process, how much leaves as finished product, and how much is recycled or recovered, you can estimate the amount that enters the air. For some sources, a material balance may provide a better estimate of emissions than emission tests would. In general, material balances are appropriate for use in situations where a high percentage of material is lost to the atmosphere (e.g., sulfur in fuel, or solvent loss in an uncontrolled coating process.) In contrast, material balances may be inappropriate where material is consumed or chemically combined in the process, or where losses to the atmosphere are a small portion of the total process throughput. As the term implies, one needs to account for all the materials going into and coming out of the process for such an emission estimation to be credible.

**Stack tests** (source-specific tests or continuous emission monitors) can also be used to calculate PTE at a facility. However, be aware that the results will be applicable only to the conditions existing at the time of the testing or monitoring. To provide the best estimate of longer-term (e.g., yearly or typical day) emissions, these conditions should be representative of the source's maximum capacity. Any stack test data used must be validated and accepted by the DEQ. Any Continuous Emission Monitoring data used must be from a monitor that has been tested and certified in accordance with DEQ policies.

**Emissions models** are available commercially, and from EPA, that have been developed to estimate emissions from a particular source or source category. Use of these models to estimate emissions must be approved by DEQ prior to use.

**Step Four:** Incorporate a safety factor into the results. Safety factors should be included in most methods used to calculate PTE. In some cases, such as manufacturer's guarantees, they are already incorporated into the emissions factor. However, note that the basis for the guarantee should also be considered if it was not developed consistent with the site-specific use for the particular emissions unit. For example, most reciprocating internal combustion engine manufacturers rate their engines based on a standard established by ISO 3046-1. The rating is specific to a defined set of standard conditions, and may require adjustment for conditions under which the engine is actually operated. In addition, engines are typically rated under various operating conditions, e.g., "best fuel economy" and/or differing "loads." The PTE should be calculated as the "worst-case" under which the engine could be operated. Equipment restricting operating conditions, such as automatic control of the air-to-fuel ratio, or rpm controls to limit the horsepower range, only reduce the PTE if conditions in a permit provide a practical method to restrict operation over the desired operating range.