

B. What Is the Affected Source?

We define an affected source as a stationary source, group of stationary sources, or part of a stationary source to which specific NESHAP apply. Within a source category, we select the specific emission sources (emission points or groupings of emission points) that will make up the affected source for that category. To select these emission sources, we mainly consider the constituent HAP and quantity emitted from individual or groups of emission points.

For the Semiconductor Manufacturing source category, the affected source includes the collection of all semiconductor manufacturing units used to manufacture p-type and n-type semiconductors and active solid-state devices from a wafer substrate, research and development activities integrated into the manufacturing process at a semiconductor manufacturing site, and storage tanks located at a major source.

A semiconductor manufacturing process unit is the equipment assembled and connected by duct work or hard piping including: Furnaces and associated unit operations; associated wet and dry work benches; associated recovery devices; feed, intermediate, and product storage tanks; product transfer racks and connected ducts and piping; pumps, compressors, agitators, pressure-relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems; and control devices. We have identified three distinct processes used in the manufacture of these semiconductors and devices: Crystal growing, wafer fabrication, and assembly and test. A semiconductor manufacturing unit is typically engaged in one of these processes.

C. What Are the Emission Standards?

Emission limits. We are promulgating standards that regulate HAP emissions from process vents and storage tank vents at semiconductor manufacturing facilities. The standards are the same for existing and new sources. All major sources must reduce process vent organic HAP outlet concentrations by 98 percent from their uncontrolled levels and reduce uncontrolled inorganic HAP outlet concentrations by 95 percent. As an alternative, process vents may be controlled to a level below 20 ppmv organic HAP and 0.42 ppmv inorganic HAP. In addition, all major sources must reduce storage tank vent HAP outlet inorganic HAP concentrations by 95 percent from their uncontrolled levels. As an alternative, storage tank

vents may be controlled to a level below 0.42 ppmv inorganic HAP.

General Provisions. The General Provisions (40 CFR part 63, subpart A) also apply to you as outlined in the final rule. The General Provisions codify certain procedures and criteria for all 40 CFR part 63 NESHAP. The General Provisions contain administrative procedures, preconstruction review procedures for new sources, and procedures for conducting compliance-related activities such as notifications, reporting, and recordkeeping, performance testing, and monitoring. The final rule refers to individual sections of the General Provisions to emphasize key sections that you should be aware of. However, unless otherwise specifically excluded in the final rule, all of the relevant General Provisions requirements apply to you.

V. When Must I Comply With the Final Rule?

Existing semiconductor manufacturing affected sources must comply with the final rule no later than 3 years after May 22, 2003. The effective date is May 22, 2003. New or reconstructed affected sources must comply upon start-up or May 22, 2003, whichever is later. Details of the compliance requirements can be found in the General Provisions, as outlined in Table 2 to the subpart.

VI. What Are the Testing and Initial Continuous Compliance Requirements?

In addition to the specific testing and monitoring requirements specified below for the affected source, the final rule adopts the testing requirements specified in 40 CFR 63.7.

We are promulgating testing and initial and continuous compliance requirements that are, where appropriate, based on procedures and methods that we have previously developed and used for sources similar to those for which standards are being promulgated today. For example, we are promulgating compliance determination procedures, performance tests, and test methods to determine what level of control a process vent needs to achieve to demonstrate compliance with the standards. We are promulgating compliance procedures to determine process vent and storage tank vent flow rates and HAP concentrations. The promulgated test methods parallel what we have used for process vents in previous organic HAP emissions standards (e.g., the HON) and inorganic HAP emission standards. For measuring vent stream flow rate, you must use Method 2, 2A, 2C, 2D, 2F, or 2G of 40 CFR part 60, appendix A. For measuring

total vent stream organic HAP concentration to determine whether it is below a specified level, you must use Method 18 of 40 CFR part 60, appendix A. For measuring the total HAP concentration of emission streams with inorganic HAP to determine if it is below a specified level, you must use Method 320 of 40 CFR part 60, appendix A. For measuring inorganic HAP that are hydrogen halides, such as HCl or HF, you must use Method 26A of 40 CFR part 60, appendix A.

Additionally, we are requiring initial performance tests for all process vent and storage tank vent HAP emission control devices other than flares and certain boilers and process heaters. For vents controlled using flares, we are not requiring performance tests because we have developed design specifications that ensure these devices will achieve 98 percent destruction efficiency. As with the HON, we are not promulgating a requirement to perform an initial performance test for boilers and process heaters larger than 44 megawatts (MW) because they operate at high temperatures and residence times. In general, the higher the temperature and residence time, the greater the level of HAP destruction that is achieved by a control device. Therefore, boilers and process heaters larger than 44 MW easily achieve the required 98 percent destruction efficiency or the alternative requirement to reduce outlet concentrations below 20 ppmv.

For all other types of control devices, the final rule requires you to conduct a performance test to demonstrate that the control device can achieve the required control level and to establish operating parameters to be maintained to demonstrate continuous compliance. The testing requirements for semiconductor manufacturing list the parameters that can be monitored for the common types of combustion devices. For other control devices, we require that you establish site-specific parameter ranges for monitoring purposes through the Notification of Compliance Status report and through the facility's operating permit. Parameters selected are required to be good indicators of continuous control device performance.

VII. What Notification, Recordkeeping, and Reporting Requirements Must I Follow?

We are promulgating notification, recordkeeping, and reporting requirements in accordance with 40 CFR part 63, subpart A and other previously promulgated NESHAP for similar source categories.