



New State Regulation for Semiconductor Operations

A new California Air Resources Board (ARB) regulation to reduce emissions of fluorinated gases from the semiconductor industry has recently been adopted. The regulation, officially known as the “Regulation to Reduce Greenhouse Gas Emissions From Semiconductor Operations”, applies to an owner or operator of a semiconductor or related devices operation that uses fluorinated gases or heat transfer fluids in the production or processing of diodes, zeners, stacks, rectifiers, integrated microcircuits, transistors, solar cells, light-sensing devices, and light-emitting devices.

The ARB adopted the regulation under AB-32, California's Global Warming Solutions Act, to reduce greenhouse gas (GHG) emissions from semiconductor operations. The regulation establishes emission standards that are achieved by using process optimization, alternative chemistries, and/or abatement to reduce emissions from chemical vapor deposition (CVD) chamber cleaning and etching processes. Semiconductor operations are a significant source of high-Global Warming Potential gases – compounds known as fluorinated gases, such as hexafluoroethane, trifluoromethane, and sulfur hexafluoride, that are hundreds to thousands of times more efficient at trapping the Earth’s heat than carbon dioxide.

By March 1, 2011, semiconductor facilities subject to this regulation must submit an “initial emissions report” to the Ventura County APCD. This report shall quantify the monthly and annual emissions of fluorinated gases from semiconductor operations conducted during the 2010 calendar year. After the initial 2010 report, annual emissions reporting is required by March 1st of each calendar year. On January 1, 2012, new emission standards for CVD chamber cleaning and etching processes take effect. If equipment installation or modification is required to meet the emission standards, an Authority to Construct application must be submitted to the Ventura County APCD as soon as possible. The regulation does contain a low emission exemption from the emission standards, but not the recordkeeping and reporting requirements.

The regulation has been adopted as Article 4, Subarticle 2, Semiconductors and Related Devices, Sections 95320 to 95326, of the California Code of Regulations. A copy of the regulation may be obtained from the ARB website at:

<http://www.arb.ca.gov/regact/2009/semi2009/semifro.pdf>

This new regulation will be implemented through the Ventura County APCD Permit Engineering and Compliance Divisions. If you have any questions, you may contact Kerby E. Zozula, the APCD’s Engineering Division Manager, at (805)645-1421.