

Emissions Often Underestimated, EPA Standards Old

Higher Tech Measuring Methods Needed

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HOUSTON — The nation's oil and chemical plants are spewing a lot more pollution than they report to the Environmental Protection Agency — and the EPA knows it.

But the federal agency has yet to adopt more accurate, higher-tech measuring methods that have been available for years.

Significant changes will not be seen for at least two more years, even though an internal EPA watchdog called for improvements in 2006 and some of the more sophisticated measuring devices have been used in Europe since the 1990s.

Records, scientific studies and interviews by The Associated Press suggest pollution from petrochemical plants is at least 10 times greater than what is reported to the government and the public.

Some European countries employ lasers, solar technology and remote sensors to measure air pollution, while the U.S. relies to a large degree on estimates derived from readings taken by plant employees using hand-held "sniffer" devices that check for leaks in pumps and valves.

The failure to get a true assessment of industrial emissions hinders attempts to monitor and regulate public health and air quality. And the problem is seen as especially urgent in oil centers such as Houston, where plants line the city's Ship Channel and nearby residents are ordered to stay inside many times each year for their own safety when the plants belch high levels of toxic substances such as benzene.

"Emissions, we do believe, have been underestimated in general," a top EPA air quality official, Peter Tsigotis, acknowledged recently. Asked why it has taken so long to modernize the measuring methods, he said: "That, I don't know."

Although U.S. oil and chemical companies have criticized some of the high-tech measuring devices, complaining they do not yield a full and accurate picture, industry representatives say they will embrace technologies that work and are affordable.

Under the federal Clean Air Act, plants must bear the cost of pollution-monitoring equipment. And the newer, high-tech devices could easily run a plant hundreds of thousands of dollars. Also, more accurate measuring devices could lead to bigger fines against industrial polluters and force them to pay for cleaner technology.

John Bosch, a chemical engineer who retired from the EPA last year, attributed the delays to the oil and gas industry's lobbying muscle and resistance to change inside the EPA.

"They have to update the way they do this, but there are many forces against that, political and economic," he said.

The EPA has known for at least a decade that its pollution measuring methods are suspect. In 2000, government-funded studies in Houston showed true emissions from plants were higher than reported.

And in 2006, the EPA inspector general, an independent oversight office, concluded that the scientific formulas used to calculate plant emissions were outdated, resulting in "significantly underestimated" pollution in the petroleum industry, wood products and ethanol production.

The report said the problem "has hampered environmental decisions, resulting in more than one million tons of uncontrolled emissions spanning years, and an increased risk of adverse health effects."

"The air might not be as clean as the agency claims," the report concluded.

Top EPA administrators promised the agency would update the "inherently uncertain and imperfect" scientific formulas and employ better technology to measure emissions.

But four years later, the goal of overhauling the science is at least two years off, and officials cannot say when — or even if — higher-tech measuring systems will be made mandatory.

Every state has at least one chemical plant, and all but 15 states have oil refineries. States such as Texas, Louisiana and California have more than a dozen petrochemical plants each. The EPA, under the Clean Air Act, has required plants since the early 1970s to measure emissions.

But Neil Carman, a chemist

with Sierra Club who spent years inspecting industrial plants for Texas' environmental agency, likens the system to "a police officer or trooper showing up on a highway every three months for 10 seconds. It's a joke."

"The numbers are erroneous," he said.

Two state- and federally funded studies obtained by the AP found vast discrepancies in 2006 between reported emissions and

pollution measured with high-tech systems in the Houston area, the heart of the Gulf Coast region that refines one-third of the country's gasoline.

In the refinery town of Texas City, the high-tech equipment detected levels of smog-causing ethene — an odorless, flammable hydrocarbon — that were 12 times higher than those recorded by EPA-approved methods. In the Houston Ship Channel and in Baytown, ethene levels were 12 1/2 times greater than reported to the EPA.

One of the mobile laser devices now in use in Europe costs about \$500,000 on average; another model about half that.

EPA officials are uncertain whether the European technology will be adopted here. They share a concern expressed by industry groups that the equipment generally captures pollution over several weeks and cannot be used to fairly estimate annual pollution.

The solution, Tsigotis said, may be to use a combination of measuring methods. "There's no

silver bullet here," he said.

Karin Ritter, an air quality expert at the 400-member American Petroleum Institute, the oil industry's chief lobbying group, said more research is needed.

"Let's wait and see what technology is the one to rise to the top," Ritter said.

Other experts say the technologies have proved their effectiveness and should be used by the EPA.

The industries are arguing "you were here on a bad day. So

when is a good day? Tell me when, and I'll come on a good day," said Alex Cuclis, a scientist at the Houston Advanced Research Center.

One Houston company that uses high-tech measuring systems, Texas Petrochemicals, has managed to cut emissions of butadiene, a toxic chemical used in synthetic rubber, by at least 75 percent, said Marise Textor, director of regulatory affairs.

"We see things very quickly that we would not have seen historically," she said.

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