Message

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Subject: FW: Chemical Makers Must Plug Leaks of Carcinogen Ethylene Oxide (3)

Updated story

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Chemical Makers Must Plug Leaks of Carcinogen Ethylene Oxide (3)

Chemical companies will have to take additional measures to plug releases of the carcinogenic ethylene oxide gas and other toxic air pollutants, in the first update to the sector's hazardous pollutant standards in more than a decade.

The Environmental Protection Agency's rule (RIN 2060–AT85), released Monday, requires chemical manufacturing facilities to plug ethylene oxide releases from storage tanks, process vents, and equipment.

"EPA evaluated the risks posed by air toxics from this source category and determined cancer risks for this source category to be unacceptable," the agency said in a press release. It deemed ethylene oxide a carcinogen in 2016.

People living near some of the plants releasing ethylene oxide have pressured the EPA to take action.

These plants, which are mostly concentrated in Texas and Louisiana, use ethylene oxide to make a range of products including adhesives, textiles, plastics, detergents, and antifreeze. The flammable, colorless gas can harm eyes, lungs, brain, and the nervous system under prolonged exposure to higher concentrations.

The updated standards for the chemical sector, once they take effect, are expected to reduce ethylene oxide emissions by 0.76 tons each year, the EPA said. That is lower than the expected 10 tons in reduced ethylene oxide emissions the agency had initially estimated in its 2019 proposal for the sector.

The EPA said the change in requirements for ethylene oxide cuts was due to the updated emissions releases it received from the affected companies.

150 Other Pollutants

The rule will also require these companies to limit at least 150 other toxic air pollutants their plants may emit, including formaldehyde, acrolein, benzene, and 1,3 butadiene.

The EPA said the final rule is expected to reduce emissions of hazardous air pollutants from companies making organic chemicals by 107 tons per year—down from the 116 tons proposed in November. Additional cuts in excess toxic air pollutants from the flares of these facilities could result in another 260 tons reduced each year, the EPA said.

The controls required to achieve these reductions are estimated to come at a price tag of $42.7 million, with the lion's share of the cost stemming from plugging ethylene oxide releases. The annual cost is estimated to be just shy of $13 milion.

Monday's action marks the first EPA update to national hazardous air pollutant limits for the chemical manufacturing sector since 2006.

Reduced Cancer Risk

Based on current emissions, the EPA said the maximum cancer risk that individuals face from inhaling ethylene oxide is 400 cases in a population of 1 million—and could be double that risk under so-called "allowable emissions" under the existing standards.

The EPA had previously calculated that the sector's cancer risk was 2,000 cases per 1 million people, driven by ethylene oxide emissions from storage tanks, equipment leaks, and process vents.

Both risks were unacceptable, the agency said. New controls "will reduce cancer risks to an acceptable level that also achieves an ample margin of safety to protect public health," according to its fact sheet.

But the agency did say that even after controls, cancer risks could be as high as 200 cases in a population of 1 million at some facilities.

Leaving some people exposed to such high cancer risk "is out of step with the Clean Air Act and EPA's own benchmark for unacceptable risk," Emma Cheuse, an attorney with the environmental nonprofit Earthjustice, said Monday. The group has been pushing the agency to tighten it standards for the chemical sector.

In explaining the cancer risk, the EPA said that "due to the inherent health protective nature of our risk assessment methods and certain uncertainties, the proposed risk assessment is more likely to overestimate rather than underestimate the risks."

Companies Involved

The American Chemistry Council said it was pleased with the efforts that EPA made on the final rule, providing comments on the proposal and engaging on behalf of its member companies including Huntsman Corp. and Dow Chemical Co..

The council said the chemical companies have already made progress in reducing emissions of ethylene oxide and other organic pollutants, but stopped short of saying whether the rule reflected that progress.

In its comments, "we demonstrated that EPA had substantially overestimated the emissions from the facilities that it had identified as presenting the highest risk in the source category. Our comments showed that similar overestimates also exist for other sources in that category," the council wrote Monday.

Cheuse was skeptical whether the companies have indeed reduced their emissions of ethylene oxide. She said Earthjustice would confirm those claims when EPA publishes the rule and the emissions record on which it based its final standards.

Texas' Looser Threshold

Despite multiple requests by chemical companies, the EPA didn't adopt a more relaxed long-term effects screening level for ethylene oxide that the Texas Commission on Environmental Quality adopted mid-May.

The Texas agency settled for a screening level of 2.4 parts of ethylene oxide per billion parts of air, which is more than 2,000 times higher than EPA's safety threshold of 0.1 parts of ethylene oxide per trillion parts of air. The EPA's Integrated Risk Information System, or IRIS, program, set that threshold in 2016.

The EPA continued to use 2016 figures in assessing the risk that ethylene oxide poses, a development that environmental advocates saw as a "notable victory" for the communities living near the chemical plants.

The American Chemistry Council and its members supported the less stringent threshold that Texas adopted. They said the EPA's 2016 screening level for the hazardous chemical wasn't supported by scientific evidence.

"While we continue to review the details of the rule, our concerns with the use of the flawed IRIS value for ethylene oxide remain and we are disappointed to see it included in the final regulation. The flawed IRIS value for ethylene oxide overestimates risk by orders of magnitude and has been questioned by several independent reviews," the council told Bloomberg Law.

Dow Chemical deferred all responses on the proposal to the American Chemistry Council, while Huntsman wasn't immediately available for comment.

This safety threshold level is important because EPA typically uses it to set regulatory limits for toxic air pollutants.

Court-Ordered Deadline

The agency was under a court-ordered deadline to issue revised limits by March, but was given more time to extend the comment period on the proposal, in response to requests it received. EPA Administrator Andrew Wheeler signed the final rule May 29, and the agency released it Monday.

Most of the 201 facilities covered by the EPA regulation are concentrated in Texas and Louisiana, with major emitters also located in West Virginia, Illinois, Delaware, South Carolina, and Kentucky.

Six of the top ten emitters of this chemical are in Texas, the remaining four are located in Louisiana, an analysis of EPA's latest emissions data show.

The data shows that Dow's Union Carbide plant in Louisiana's St. Charles Parish is the largest emitter of this carcinogenic gas, followed by Huntsman Corp.'s Port Neches plant in Port Arthur, Texas.

Both Dow and Huntsman have said that they are taking steps to limit releases of ethylene oxide into the surrounding areas.

No Impact on Sterilizers

Under the rule, EPA is requiring companies to improve their work practices during startups, shutdowns, and malfunctions, and specifically address ethylene oxide releases from storage tanks, and emissions and leaks at facilities using the gas.

The nonprofit Environmental Integrity Project told the EPA not to ignore releases of these toxic chemicals when equipment malfunctions during startups and shutdowns, as that is when the highest amounts are released into the air.

Ethylene oxide also is used as a medical sterilizer. Several medical device sterilization facilities shuttered over neighborhood health concerns have reopened in recent months to help with medical equipment sterilization during the coronavirus pandemic. But the new rule applies only to chemical manufacturers, not companies that use ethylene oxide.

—With assistance from Alexandra Yetter.

(Updated with reaction from Dow Chemical and the American Chemistry Council. A previous version corrected information on the EPA's court deadline extension.)