The Pima County Department of Environmental Quality issued an air quality permit Monday to Becton, Dickinson and Company for a new sterilization facility in southeast Tucson. The company makes medical devices ranging from syringes to lab equipment.

Joan Ford, Becton Dickinson

The Pima County Department of Environmental Quality issued an air quality permit Monday to a company set to build a sterilization facility that would emit trace amounts of hazardous gas in southeast Tucson.
Becton, Dickinson and Company, or BD, plans to build a 140,000-square-foot sterilization facility at 7345 E. Valencia Road near South Kolb Road this year. The county’s Department of Environmental Quality, PDEQ, granted the multi-billion-dollar medical technology company an air quality permit that allows it to begin construction.

The facility will use ethylene oxide, a colorless, highly flammable gas that the U.S. Environmental Protection Agency classifies as a human carcinogen, to sterilize medical equipment.

PDEQ is responsible for monitoring air quality in the region and developing standards for new facilities that emit hazardous air pollutants. The department’s been reviewing BD’s application since April 2021.

The permitting process was delayed after a letter from the Environmental Protection Agency suggested PDEQ make changes to its draft version of the permit, including changing the monitoring process of emissions at the facility and updating the study on how emissions could impact the surrounding community.

Construction of the site, which neighbors the Davis-Monthan Air Force Base and an Amazon distribution facility, will likely start in late June or early July, according to Troy Kirkpatrick, a spokesman for BD.
“We do feel confident that the communities will be safe, and they won’t be affected by this facility,” said Natalie Shepp, the outreach and education senior program manager for PDEQ. “We’ve made the most stringent possible permit that we could have.”

**A more stringent permit**

The first draft of the air quality permit called for ambient air monitoring, which measures air pollutants in the surrounding area, a process the EPA said “can be difficult to distinguish between pollution from the facility and pollution from other sources” in its letter to PDEQ.

The final permit adopts the EPA’s recommended monitoring system — continuous emissions monitoring — which measures pollutants directly from their source. According to PDEQ, the change increases emissions measurements by at least 8,000 times. That emissions data will be available on a public webpage.

The BD facility is allowed to emit no more than 709 pounds a year of ethylene oxide into the surrounding environment. According to BD, the facility would have control measures that would get rid of 99.95% of the gas.

The permit also requires BD to install leak detection and repair practices to identify excess emissions through leaking equipment.

The EPA has been reviewing the regulations for ethylene oxide outlined in the Clean Air Act since 2018. The regulations for commercial sterilizers using the gas were last updated in 2006, but the EPA plans to announce proposed changes this year. Those could include more stringent regulations for commercial sterilizers but involve many steps that could take years to actually implement.

When the rules do go into effect, commercial sterilizers would have “no later than three years after the effective date” to comply, according to the EPA.
While BD is responsible for following the permit’s conditions, PDEQ will hold both announced and unannounced inspections to make sure those conditions are met. Violations can result in a warning to correct a mistake, a fine or halting operations.

“This permit allows BD to move forward with our planned sterilization facility that will help ensure access and continuity of supply for essential medical products for patients in Arizona and around the world,” Kirkpatrick said in an email, later adding, “We listened to the community feedback during the permitting process and will also install continuous air monitoring technology to ensure the effectiveness of the emission control equipment and to help reassure the surrounding community of the safety of our facility.”

The EPA also suggested PDEQ update the environmental justice analysis it released in November to determine more advanced demographics of the facility’s surrounding population.

The department reviewed 50 square miles surrounding the proposed facility — an area the department estimates contains 42,325 people.

The results showed the population is comprised of 48% minority communities, 29% low-income individuals and 10% people without a high school diploma — some of the demographics PDEQ considers more “at-risk” when receiving necessary access to information.

The results showed that “emissions from the project will not result in disproportionately high and adverse human health or environmental effects on any population,” the analysis said.

“It’s important to remember that the (environmental justice) report is simply an assessment of who lives in the area,” Shepp said. “It’s done for outreach purposes for us to understand who we’re trying to reach.”
The environmental justice analysis also delineates other possible pollutants in the area, including “several sites that report to EPA ... in every direction from the proposed facility.”

“These environmental indicators demonstrate that nearby residents are exposed to a variety of pollution sources in the near-by vicinity, including Tucson’s largest landfill and power plant and the Davis-Monthan Air Force Base,” the report said.

Dozens of schools are located within about a 3-mile radius of the facility, the report found, which “indicates that numerous children will be attending schools within the one to four miles of the proposed facility.”

Public concern

In addition to the final permit, PDEQ also released Monday general responses to main themes from more than 100 public comments sent in throughout a 90-day public input process.

The bulk of public input expressed concern about the cancer-causing properties of ethylene oxide.

The EPA first classified ethylene oxide as a human carcinogen in 2016, finding the chemical to be capable of changing DNA in a cell, and therefore more dangerous for children whose growing bodies make them more susceptible to harmful effects. The EPA has found evidence that long-term exposure to ethylene oxide increases the risk of myeloma, leukemia and breast cancer.

Included in the PDEQ’s responses was an answer to a key question for many public stakeholders: Why would the department allow “a known carcinogen to be emitted into the atmosphere?”

The department cited the “advanced air pollution controls,” which are more stringent than federal standards, planned for the facility. It also noted ethylene oxide is “a frequently used chemical in a variety of applications,” and about 50% of sterilized medical equipment is treated with the gas.
Pima County’s supervisors and the Tucson City Council have both expressed concerns about BD’s operations.

City Council passed a motion in February to write a letter to BD that said: “unless and until (BD) can provide a risk assessment that addresses all of our concerns related to catastrophic releases and Tucson Fire’s ability to contain them, that they’re not welcome in this community.”

The area where BD wants to construct the facility is in city limits and is already zoned for industrial use, leaving the city’s planning and development services department little room to deny its land-use permit.

Councilman Steve Kozachik, who proposed the motion, said the city hasn’t heard back from BD.

“My issue is that we should not be issuing any building permits until they have answered our questions about the catastrophic release, about transportation routes, about all the things that we mentioned,” he said. “Those are serious life safety and health issues that the city is responsible for.

Councilwoman Nikki Lee, who resides over Ward 4 where the facility will be built, said her main concern is the health of the facility’s surrounding residents and hopes any new guidance from the EPA on ethylene oxide use will be implemented as soon as possible.

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