RICHMOND -- While Monday's massive fire at Chevron's Richmond refinery blackened skies, scared residents and renewed calls for stricter regulation and oversight, the frequency and severity of such accidents at Contra Costa County's four oil refineries have declined significantly since beefed-up industrial safety regulations were put in place 13 years ago.

In fact, Monday's blaze is the first refinery accident to receive the county's most severe designation -- Level 3 -- since a similar fire struck the same facility in 1999. From 1992 to 1999, Contra Costa's heavy-industry facilities endured 11 Level 3 incidents, killing six workers, injuring almost 50 others and sending more than 23,000 residents to hospitals for treatment.

Industry experts and elected officials say the industrial safety ordinance appears to have played a major role in making accidents such as Monday's much more rare. In three of the past four years, no industrial accidents occurred within the county that generated a severity alert of any level.

Nevertheless, some officials say more must be done to prevent a repeat of Monday's fire that sent noxious smoke billowing over surrounding communities and prompted more than 1,000 people -- including five Chevron emergency responders with minor burns -- to seek medical treatment.

The city of Richmond passed an identical ordinance three years later to cover Chevron, the only such facility in Contra Costa not on county land. However, the county passed additional safety amendments in 2006, and now Richmond's mayor and supervisor and the county's hazardous materials chief are recommending the city add those stricter guidelines.

"We certainly would want to adopt those and possibly go further," Mayor Gayle McLaughlin said. "It's not good enough to say refineries have inherent problems and every five years this will happen. That's not OK."

Supervisor John Gioia, a Richmond resident, said the industrial safety ordinance has served the county well.

"There's been a dramatic decrease in industrial accidents since its implementation," Gioia said. "It's considered the strongest local ordinance in the country. ... This (week's) incident bucks that trend."
The Richmond refinery is governed by some of the most stringent environmental laws in the world, said Chevron spokeswoman Melissa Ritchie.

"Chevron is proud of its overall safety record and remains committed to working safely at all times and all locations," she wrote by email.

The 1990s

On Feb. 23, 1999, before the new regulations had been implemented, Contra Costa hit an industrial-safety low point when workers at the Tosco refinery at Avon, north of Concord, attempted a risky operation to replace piping around a crude-processing unit while it was still operating. Employees cut out part of the pipe, and hot petroleum spewed out and ignited, killing four workers and severely burning a fifth. Two mergers later, Tesoro now operates the Avon refinery.

In May 1999, a blown valve stem sparked a major fire at Chevron's Richmond refinery that shut down most of the plant, left two people with minor injuries and sent smoke over much of the northern Bay Area.

Earlier that year, on Jan. 15, county supervisors narrowly passed the landmark safety ordinance, which refineries fought tooth and nail. After two Level 3 incidents shortly following its passage, the legislation began changing the safety landscape in Contra Costa, a county hosting more industrial hazardous materials per capita and per square mile than any other in the state.

The county program, which augments state regulations, requires companies to have a risk-management plan, safety audits every three years, simplified operating procedures and unannounced inspections. Facilities must respond to safety recommendations and provide three reports (72-hour, 30-day and root-cause) after an incident.

The ordinance also allows the county to levy minor fines and arrest refinery workers on misdemeanor violations -- and sentence them up to six months in jail -- if evidence determines misconduct led to injuries.

In 2006, the county amended the ordinance to require creating a stronger safety culture, security vulnerability assessments and adjustments to the human factor section.

72-hour report

Late Thursday, Chevron sent its mandated 72-hour incident report to the county, offering a brief snapshot at the pollution it caused but few revelations about what caused the leak and fire. The report said operations personnel were evaluating a reported leak in the No. 4 crude unit involving equipment associated with the 8-inch atmospheric distillation pipe before it burst.

In its summary of flare emissions, Chevron noted that more than 2 million standard cubic feet of vent gas was released, in addition to 739 pounds of sulfur dioxide. The company said it was unknown how much hydrocarbon was combusted, adding that no adverse air quality impacts were associated with the fire.

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The 2007 fire in the same No. 4 crude unit was sparked when a corroded pipe that should have been removed 20 years earlier was left attached to equipment. The industrial safety ordinance required Chevron to replace dozens of similar pipes from the crude oil processing unit to stave off censure and fines.

Good Neighbor Strengthening refinery oversight in the county has long been messy. Triggered by the 1993 General Chemical release that sent a sulfuric acid cloud through Richmond and sent more than 22,000 people to the hospital, the county passed the short-lived Good Neighbor Ordinance. Approved in 1996, the union-sponsored legislation was quickly challenged by refinery and chemical plant operators in court amid concerns it would force them to build new plants.

As the Good Neighbor Ordinance stalled, then-Supervisors Mark DeSaulnier and Joe Canciamilla brought industry executives, union leaders, environmental groups and residents together to develop the new Industrial Safety Ordinance. Environmentalists felt it did not go far enough, but shortly after a court struck down the Good Neighbor Ordinance, the Industrial Safety Ordinance passed.

Now, environmentalists agree that Contra Costa County's four refineries have improved safety records since the county adopted the safety ordinance.

"The frequency and magnitude of serious events has decreased," said Greg Karras, senior scientist with the Communities for a Better Environment.

It's been recognized nationally as the plan to follow, said Contra Costa Hazardous Materials Program Director Randy Sawyer.

"I think the ordinance is still effective," he said. "No matter what you put in place the potential is there for an incident."

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