

Type of business	Illness or injury per 100 workers*
Meat product manufacturing	31.8
Trucking	18.9
Residential building construction	18
Furniture manufacturing	17.8
Food stores	14
Chemical manufacturing	11.5
Newspaper publishing	9
Petroleum refining	5.0
Banking	3.3
Aircraft manufacturing	3.2

*Based on reports collected by California Department of Industrial Relations for 1983.

Illness and injury in petroleum refining per 100 employees

1977	1978	1979	1980	1981	1982	1983
5.3	4.8	4.6	5.5	5.8	4.4	5.0

Source: California Department of Industrial Relations

David Barber / Staff photographer

How safe are refinery workers?

By Warren Robek
Staff writer

A gas explosion at an oil refinery kills a truck driver who inadvertently opens the wrong valve.

Five workers die and more than 40 others are injured after an explosion and fire caused by a ruptured pipe at another refinery.

A worker is seriously burned by a flash fire that erupts as he and two co-workers finish installing a new fuel line.

The accidents, all of which occurred at refineries in the South Bay within the past two months, raise anew questions about the safety of the area's vast petroleum refining industry.

Despite statistics that show refining to be one of the safest manufacturing activities in the state, questions have been raised about the quality of maintenance at the plants and state rules governing minimum safety policies.

Union officials have charged repeatedly during the past several years that safety has been compromised by industry policies that have phased out union workers on maintenance jobs in favor of outside construction firms.

Meanwhile, new state regulations drafted to replace existing refinery safety policies, which in some cases are decades old, have been moving slowly through the bureaucracy, raising the ire of even industry officials.

Yet people both in and out of the industry agree that petroleum refining has a solid safety record.

"Obviously, when something goes wrong in a refinery it can be catastrophic," said Tom Butler, a state safety expert who has helped probe many refinery accidents. "The potential is high, but statistically the injury and illness of workers at refineries is very low."

"Refineries are safe," said John Sligson, a 15-year oil refinery veteran. "What causes the problems are the people working in them."

Statistically, the number of illness and injuries per oil refinery worker is much lower than most other types of manufacturing.

While the average number of cases of illness and injury among California manufacturing companies in 1983 was 10.7 per 100 workers, the oil industry reported a rate of 5 per 100 workers, according to the state Department

Refinery / A9

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West Coast, includes annual checks of critical piping each year, extensive training for workers and periodic review by corporate safety engineers.

Advancements in electronics also have allowed refinery operators to improve their control of super-heated refining processes, heading off problems before they become critical, Walker said.

"I have to admit that the companies have a lot of good training and safety programs," Siggson said. "They are really big about

A study done by AQMD officials last year on the chances of a major chemical accident in the Los Angeles generally gave refineries a high safety ranking.

"Where the risk could be greatest in a refinery, there was a sufficient amount of money going into safety precautions," said Eugene F. Calafato, one of the report's authors. "You can never devise a preventative maintenance schedule that can catch every equipment failure."