

The Japan Syndrome

The nation's worst civilian nuclear accident is the latest in a long line

By **TIM LARIMER/TOKYO**

THE FLASH OF BLUE LIGHT WAS THE FIRST sign that something was horribly wrong. Three workers feeding uranium into a tank were jolted by the flash inside the JCO uranium-processing plant, 85 miles northeast of Tokyo. One of them was knocked unconscious. Within minutes, the others were nauseated, and their hands and faces were burned bright crimson. The way they had handled stainless-steel pails full of uranium 235 had caused the worst nuclear accident in Japan's history.

As the workers soaked up potentially lethal doses of radiation, still more leaked from the plant in Tokaimura, the hub of the Japanese nuclear power industry. Eventually, more than 300,000 people in Tokaimura and eight nearby towns were bunkered in their homes, waiting to find out how badly they were affected. Meanwhile, 28 million people in metropolitan Tokyo, downwind of the accident, wondered about their fate. As the hours ticked by, a plodding government dithered and displayed once again its inability to come to grips with a huge nuclear power industry riddled with safety flaws.

It wasn't Chernobyl and it wasn't Three Mile Island, but the accident was bad enough. What made it most frightening was the amount of time that passed before anybody seemed to know just how bad it was or wasn't. At one point, radiation levels a mile or so from the plant were 15,000 times higher than normal for an urban setting; 46 workers were exposed to dangerously high levels of radiation. U.S.

and European experts said backup safety measures should have automatically shifted into gear to halt the disaster. But the facility, housed in a bland-looking white five-story building just 60 ft. from the nearest residential housing, apparently had no such safety precautions.

The factory, built in 1982, is part of the fuel supply line for an experimental fast-breeder nuclear power plant. It is where fissionable U-235 is combined with nitric acid to produce uranium dioxide, which is then combined at another plant with plutonium to produce the enriched uranium pellets used as breeder fuel. According to JCO, workers inexplicably mixed far more than the normal amount of uranium—35.2 lbs. instead of 5.2 lbs.—with the acid. Then they used stainless-steel buckets rather than pipes—again, inexplicably—to pour the liquefied uranium into the tank. The high concentration of uranium started the nuclear fission that normally occurs in power reactors. Power plants have equipment to moderate such chain reactions. Fuel-processing plants don't.

In the town of Tokaimura—home to 15 nuclear power facilities—none of the 33,900 residents could see the flash or know that radiation was escaping. Members of the Kawano family, who live in the vicinity, were drawing water from the family well

to wash vegetables and brush their teeth. Two hours after the accident, teenager Yoshitaka Nanbara wandered to a friend's house, just a few yards from the facility's back fence. The two youngsters spent an hour or so playing Biohazard on a Sony PlayStation. Loudspeakers mounted on telephone poles around the town, built to warn of nuclear disaster, were silent. ■

Questions

1. What caused the accident at the Tokaimura plant?
2. According to the writer, what was the most frightening aspect of this situation?

