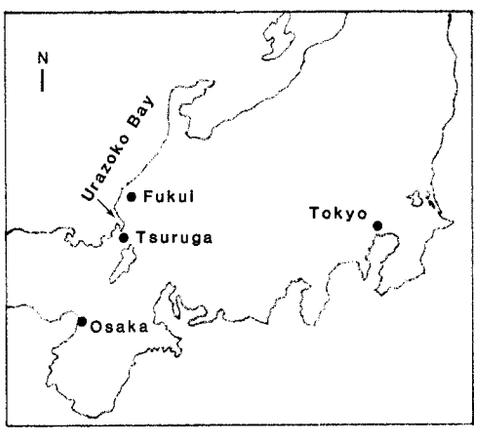
Japanese Agitated by Nuclear Plant Spill

Japan's aggressive nuclear power program has been dealt a political setback by the belated discovery of a spill of radioactive water from a reactor into a fishing area off the remote Fukui prefecture, 225 miles west of Tokyo. Although the spill caused no apparent harm to the fish or to the health of the workers who helped clean it up, the public has been agitated by the utility's admission that it was deliberately concealed. Ensuing embarassment has caused the president and the chairman of the Japan Atomic Power Company to resign. And the socialist party of Japan, the country's second biggest political organization, joined with a large labor union after the disclosure to renew its call for an end to the country's nuclear power program.

It is unlikely that such a call will ever be heeded in energy-starved Japan, which has 22 operating reactors and



plans for 35 more by 1990. But the utility's cover-up has clearly shaken the nation's confidence in the industry. Toshiichi Suzuki, the power company's president, said, "I deeply apologize that these accidents and cover-ups took place at a time when the government puts emphasis on power generation by nuclear energy and undermined the people's trust in nuclear power." Investigators had also learned of at least four other spills and accidents at the plant, near the town of Tsuruga, over the past 5 years, none of them previously disclosed to the public. In retribution, the government ordered that the reactor—already shut down for routine maintenance—remain closed for 6 months. Safety improvements costing $11.3 million will be required.

The reactor and waste treatment plant involved were manufactured in the United States by General Electric, using designs furnished by Ebasco Services Inc., of New York. Similar reactors manufactured by GE compose roughly a quarter of those operating in the United States, and staff members at the Nuclear Regulatory Commission have been closely following events in Japan. Dorothy Zukor, a systems engineer at NRC, says it is too soon to tell what the lessons are for U.S. operations. "It is still not clear what regulations were broken and whose fault it was." A spokesman for GE says the company is not concerned, because the spill began in a portion of the treatment plant that was constructed by the Japanese.

According to a report by the Japanese Ministry of International Trade and Technology (MITI), which oversees all nuclear operations, the spill into Urazoko Bay was caused by a combination of technical problems and human error. A worker in the waste treatment plant was flushing some pipes and neglected to shut off the intake valve. As a result, a holding tank for radioactive water overflowed, covering the floor of one room and splashing down a long corridor. The utility apparently failed to measure the water's precise radioactivity during cleanup, but MITI estimates that it was in the "tens of millicuries per ton." The utility is also unsure about how much water spilled, but estimates that it was at least 15 tons, or 3750 gallons.

A small portion of the water surged through a pipe in the holding tank room that was connected to the adjacent laundry room. According to MITI, the water seeped through cracks in the laundry room floor, penetrated the ground, and leached into a storm sewer line buried beneath the room. From there it flowed into the bay, where health authorities discovered radioactive shore sand and *hondawara* (an inedible seaweed) during a routine sampling over a month later. The seaweed had concentrations of manganese-54 and cobalt-60 that were ten times normal.

Confronted with the evidence, utility officials admitted that the spill had occurred on the evening of 7 March. It went undiscovered until the next morning because of technical malfunctions in the signal for the intake valve and in the overflow indicator in the control room of the reactor itself. The overflow was signaled in the treatment plant control room, but no one was present to see it.

When it was eventually discovered, workers were immediately summoned to mop up the floor with dust cloths and plastic buckets. Over the next 2 weeks, the utility hired 48 others from outside the plant to assist in the cleanup, a fact that later gave rise to hysterical and erroneous claims in the Japanese press that "kamikaze workers" had been employed. The utility says that the workers received an average radiation dose of 35 millirems per day, well within Japanese exposure limits (which are identical to those in the United States). Japan's regulatory agency had initially charged that the workers dumped the radioactive water down a manhole leading to the storm sewer situated just outside the laundry room, partly because high levels of radiation were found in the drainpipe near the manhole. But MITI now says the leakage was accidental, and the manhole has since been plugged with cement.

The most serious of the previous accidents at the site occurred in 1975, when a similar spill exposed 35 workers to an undetermined amount of radiation. Another minor spill occurred more recently, and in January, 23 workers were exposed to low levels of radiation during repairs on a tank that holds steam used to drive turbine generators.

Rokusuke Tanaka, MITI's director, told the Parliament that "this should never happen again." Residents of the low-income Tsuruga area have been placated after previous reactor mishaps with cash payments from the utility to the town government, according to the *New York Times*. But whether such tactics will continue to work is uncertain. Licensing at six plants elsewhere in Japan has already been delayed by lawsuits from antinuclear activists, who may now focus their attention on Fukui. The utility wants to build eight more reactors in the area.—R. JEFFREY SMITH

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