

## Unsettling Decision

The Nuclear Regulatory Commission (NRC) has been much maligned for the plodding pace at which it conducts business. Utility executives and spokesmen for the nuclear industry are fond of reciting horror stories about the mounds of paperwork and months of delay involved in licensing a nuclear power plant. But now, just when it appeared that the commission's methodical procedures had proved their worth by catching a serious safety problem before a reactor began to operate, the commission has decided to hasten its regulatory pace and ignore the dangers that years of scrutiny revealed.

The reactor in question is the Diablo Canyon nuclear plant, which sits on the Pacific coast near San Luis Obispo, Calif. The Pacific Gas & Electric Co. (PG&E) began to build the plant in 1968. A year later, Shell Oil Co. geologists discovered the Hosgri earthquake fault two and a half miles offshore. The geologists published their findings in 1971; the utility learned of them in 1972 and told the Atomic Energy Commission (the NRC's predecessor) in 1973. In 1975, the U.S. Geological Survey concluded that an earthquake that could measure 7.5 on the Richter scale might occur along the fault. By this time, the nuclear plant was more than 75 per cent complete.

In order to be allowed to continue construction, the utility agreed to install new structural supports around the piping and equipment of the plant's safety systems. Braces were added to ensure that the plant could be shut down and its radioactive fuel cooled and protected should a strong earthquake occur.

By December 1978, company officials were predicting that the Diablo Canyon plant could begin operating the following April. But the March 1979 accident at Three Mile Island prompted NRC officials to hold up applications for nuclear plant operating licenses. Predictably, the utility howled, and the Edison Electric Institute, which represents privately owned utilities, complained that the commission's delay was costing consumers \$76 million a month.

The regulatory machinery ground along for months, with a final showdown last September, when the commission's safety and licensing board ruled that the plant could be operated safely, and the full commission voted, 5-0, to permit the utility to load fuel and conduct low-power tests of the reactor. Anti-nuclear protestors swarmed to the site to interrupt fuel-loading operations by blocking workers from entering the plant. More than 1,000 persons were arrested for illegal trespass, but for the utility, the day of victory seemed to be at hand.

Then, before the plant workers had time to install the radioactive fuel, an accidental discovery turned the utility's victory to inglorious defeat. An engineer working at an adjacent reactor still under construction discovered some structural errors he couldn't explain. A look at the blueprints revealed that plans for the two reactors—which are mirror images of each other—had been inadvertently switched. As a result, the seismic supports added to deal with the potential earthquake damage had been put in backwards; some pipes and equipment were supported too rigidly, others not firmly enough. The utility broke the news to the NRC on Sept. 28 and became the

laughingstock of the industry. "Obviously if one engineer can find a problem by accident, it is reasonable to assume that an army of engineers second-guessing everything can find many more," a commission spokesman said.

Commissioner Peter A. Bradford was more outspoken. "This is a first-rate screw-up," he said. "Here you have the most controversial area of discussion [earthquake stress] in what is probably the most controversial nuclear plant in the country."

The harder the commission looked at the mix-up, the more serious it appeared. At first it seemed that the misplaced pipes were connected only to the plant's cooling system. Then it became obvious that three other systems used to cool the reactor in case of a shutdown or accident were also involved. Another system, designed to remove explosive hydrogen from the reactor, was incorrectly braced for seismic shocks.

The commission allowed the utility to hire an "independent" consultant to sort out the mess, only to learn that the consultant cleared his report with the utility before sending it to the NRC. On Nov. 19, the commission suspended the utility's license, an action that chairman Nunzio J. (Joe) Palladino called a "strong sign that the commission doesn't like what it's seen."

Richard De Young, director of inspection and enforcement for the commission, said there was something "basically wrong with the leadership" at the utility. Robert Engelken, director of the NRC region that includes California, said the utility had shown "arrogance" in its attitude toward the commission. "It seems to me that this incident calls into question the integrity of the company and the question of whether it is fit to run a plant," said commissioner Victor Gilinsky.

For its part, the utility reacted to the loss of its long-sought operating license by complaining that it was "disappointed" with the suspension, "especially since nothing has been discovered to date that would indicate the plant is unsafe." When questioned about its "arrogance," a PG&E spokesman said his firm "had no such attitude and it would not be tolerated."

The commission's regulatory caution ultimately saved the utility millions of dollars. If the utility had operated the reactor before the structural mistakes were discovered, the corrective measures would have been much more complicated, costly and hazardous.

But then, having seen its caution pay off, the commission performed an about-face. On March 18, it voted not to review the ruling by its safety and licensing board that Diablo Canyon could withstand a strong earthquake, a ruling made before the blueprint mix-up was discovered.

Bradford and Gilinsky, the two dissenters, said after the vote that unless the NRC reviewed the board's ruling, "not only will questions remain about the correctness of the Diablo Canyon seismic design, but the board's decision will stand as an unfortunate precedent which will undermine application of the commission's regulations on seismic design... We cannot escape the impression that the commission is declining review not because the opinion is essentially sound, but because it is unsound and the prospect of reviewing it is so unsettling." □