

Three Mile Island: Rogovin blasts NRC

When the Nuclear Regulatory Commission proposed fining Metropolitan Edison Co. \$155,000 for actions surrounding the March 28 accident at its Three Mile Island nuclear plant (SN: 11/3/79, p. 309), it left open the possibility of additional fines and perhaps revocation of the utility's license pending results of NRC's own special inquiry into the accident. But when the report by that "special inquiry group" was made public last week, it was NRC not the utility that came under heaviest fire.

More than 70 nuclear engineers, scientists, lawyers and others—including more than 40 members of NRC's senior staff—participated in the seven-month, \$3 million study conducted under the direction of Washington attorney Mitchell Rogovin. The panel was charged with assessing actions, and presumably culpability, before and during the accident by both the utility, which ran TMI-2, and by the NRC.

What it found was "an industry in which the expertise and responsibility for safety is fragmented among many parties ... in addition to the NRC. Coordination among these parties and between them and the NRC, as well as within the NRC, is inadequate. As a result, there are many institutional disincentives to safety." It went on to charge that the nuclear industry, prior to the accident, made "only feeble attempts to mount any industrywide affirmative safety program," and that many utilities "regarded bare compliance with NRC minimum regulations as more than adequate for safety."

"On top of all this," the report's authors say, "we found that before March 28, 1979, an attitude of complacency pervaded both the industry and the NRC, an attitude that the engineered design safeguards built into today's plants were more than adequate," and that an accident like the one at Three Mile Island "would not occur."

But saving its more serious criticism for the regulators themselves, the Rogovin team labeled NRC "an organization that is not so much badly managed as it is not managed at all. In our opinion, the Commission is incapable, in its present configuration, of managing a comprehensive national safety program for existing nuclear powerplants adequate to ensure public health and safety." Its conclusion: "A radical reorganization of the Commission's structure and management is called for, now."

The most controversial aspect of the reorganization measures that Rogovin's group proposed was that the agency's collegial management by five commissioners be abolished. "It's no secret," Rogovin told the four commissioners who attended a briefing on the report Jan. 25, "that the variety of viewpoints between the incum-



Suited up to inspect damaged TMI plant.

bent commissioners and their inability to work together have exacerbated an already unwieldy structure. This leaves, in our view, the NRC in paralysis." Rogovin said the "central and overwhelming need" is a reorganization of the agency under a single chief executive. But the commissioners, particularly Victor Gilinsky and Peter Bradford, challenged Rogovin, saying that any problems the current commissioners might have in getting along with each other in no way justified sacrificing the necessary diversity of viewpoints and expertise essential to managing the

controversial political and technical issues involved in regulating nuclear power.

Bradford and Gilinsky also probed Rogovin on why he had not recommended a moratorium on the licensing of new nuclear plants and a shutting down of all existing plants. Gilinsky pointed out that if the present commission was "incapable" of ensuring the public health and safety as it regulated nuclear power—a charge Rogovin had made in his presentation—then the commission was failing to carry out its statutory responsibilities. And that, Gilinsky said, implies that nothing short of shutting down would be prudent. Rogovin tried to back down on the issue, which then led the commissioners to suggest that maybe he had exaggerated the magnitude of NRC's problems all along.

NRC chairman John Ahearne pursued the issue, asking Rogovin for justification of several other severe criticisms of NRC contained in his report. While a 183-page summary of the Rogovin team findings was published last week, data ostensibly justifying those findings are only to be found in a 1,500-page follow-up volume that three of the four commissioners—including Ahearne—had not yet seen (it is to be published in several months). Pressed relentlessly, Rogovin finally admitted to Ahearne that at least one of his most serious assertions was really only "rhetoric."

Having only 24 hours to review the report prior to their briefing, the commissioners generally found its portrayal of the accident and related issues accurate. It was with the report's extrapolations that they were most critical. □

Smoking and sleep: A rude awakening

One reason that smokers smoke, presumably, is that the stimulating effect of nicotine may help keep them going during waking hours. It now appears, though, that any nicotine-induced alertness may be offset by sleep problems at night. In addition to its documented physical hazards, chronic smoking appears to contribute significantly to sleeping difficulties, reports a study team from the Sleep Research and Treatment Center at Pennsylvania State University.

In the first of two experiments, the researchers recorded (through electroencephalograms and other devices) the sleep patterns of 50 chronic cigarette smokers and 50 non-smokers matched by sex and age. All the smokers had been smoking for at least three years and went through a mean of 1.25 packs per day.

The results, reported in the Feb. 1 SCIENCE, show that the smokers were awake nightly for a significantly longer period—92.7 versus 73.9 minutes—primarily because they had greater difficulty in falling asleep. Upon further study, the researchers determined that more frequent coffee consumption by the smokers could

not have accounted for the effect.

In the second part of the study, the researchers recorded the sleep patterns of eight male smokers during five days while they abstained from smoking. The data revealed that the sudden withdrawal from cigarettes prompted a dramatic drop in time spent awake at night—from a mean of 75.9 minutes while smoking down to 42 minutes during the first three nights of abstinence and 51 minutes on nights four and five.

"The results of these two studies suggest that cigarette smoking is associated with sleep difficulty," report Constantin R. Soldatos, Joyce D. Kales, Martin B. Scharf, Edward O. Bixler and Anthony Kales. They attribute the sleep improvements during abstinence to "a decrease in catecholamine concentrations after withdrawal...." Previous studies had shown smoking to increase the nervous system's production of the chemical family of catecholamines. And the researchers add that while their results indicate that coffee drinkers may develop a tolerance to caffeine, no such tolerance for nicotine appears to be present for smokers. □