Briefing

Panel Says Synfuels Pose No CO_2 Hazard, for Now

In the ongoing national debate over the Carter Administration's synthetic fuels policy there have been some urgent warnings that the release of carbon dioxide associated with production and use of synfuels might bring disastrous climatic changes, with the onset of those changes possibly coming early in the next century. But the National Academy of Sciences' Climate Research Board has now issued a statement which in effect challenges the validity of such dire prophecies.

It says that the big synfuels program proposed by the Administration, which envisions the production of $2^1/_2$ million barrels a day by 1990, would not lead to a major increase in the concentration of CO_2 in the atmosphere if the commitment to synfuels were only for the "next few decades."

The statement was prepared specially for Senator Abraham Ribicoff's Governmental Affairs Committee and sent to Ribicoff under a covering letter by Philip Handler, president of the academy. On 19 July, the climate board was holding a workshop at Woods Hole, Massachusetts, on the federal government's 5-year climate program, and Handler—having been asked by Ribicoff for the academy's advice on the CO_2 issue—called on the workshop participants for help. An ad hoc group of four scientists then wrote the statement, and circulated it among the 30 workshop participants for their review and criticisms, which are said to have been minor.

The statement runs directly counter to an assessment of the CO_2 problem made by Gordon J. F. MacDonald, a member of the academy and chief scientist of the Mitre Corporation, whose views have been given wide currency by the press and through congressional testimony (MacDonald's testimony before the Governmental Affairs Committee led Ribicoff to seek the academy's advice).

According to the climate board, if the United States and other industrial nations, such as the Soviet Union, were to produce a total of 5 million barrels of synfuels a day over the next 20 years, the increase in the concentration of CO_2 in the atmosphere—now at about 335 parts per million—would be only slightly greater than the increase of from 30 to 60 parts per million expected by the year 2000 from the direct burning of coal and other fossil fuels if the upward trend in the consumption of those fuels continues. MacDonald, on the other hand, has said that, if the United States and the Soviet Union should each start producing some 2- to 3-million barrels of synfuels a day, the concentration of CO_2 in the atmosphere could double by the year 2010 (*Science*, 27 July).

MacDonald has written Handler to say that the board's statement was "consistent" with his own views and to protest what he referred to as Handler's "subtle undercutting" of the board's major conclusions by his covering letter. In particular, he objected to Handler's observation that the "relatively small additional contribution to CO_2 accumulation" that could result over the next two or three decades from production and use of synfuels "does not appear to be a weighty deterrent to a national coal liquefaction or gasification effort" provided that it is recognized that synfuels may not represent an acceptable energy option for the long term.

But one of the drafters of the board's report, Roger Revelle, professor of science and public policy at the University of California at San Diego and an expert on the CO_2 problem, told *Science* that he saw no inconsistency whatever between Handler's observation and the views expressed by the board. As for MacDonald's prediction that a big synfuels program in the United States and in the U.S.S.R. could lead to a doubling of CO_2 in the atmosphere within 30 years, Revelle said, "I think Gordon is wrong about that."

Revelle, MacDonald, and two other scientists prepared a paper on the carbon dioxide problem for the Council on Environmental Quality in early July. The paper warned of a doubling of atmospheric CO_2 by the middle of the next century if use of fossil fuels worldwide continued to increase, but it did not argue explicitly against a synfuels program. It merely said that the time had come for the CO_2 problem to be taken into account in the shaping of energy policy. Besides Revelle, the coauthors of the climate board's statement were Bert Bolin, a meteorologist from the University of Stockholm and a world authority on the carbon cycle; Lester Machta, director of the National Oceanographic and Atmospheric Administration's Air Resources Laboratory; and Steve Schneider, of the National Center for Atmospheric Research at Boulder, Colorado.

Sprinkler System Drowns Census Bureau Computers

A bizarre accident at the U.S. Census Bureau's headquarters at Suitland, Maryland, outside Washington, has literally drowned out all of the bureau's mainline computer capacity.

Early the afternoon of 8 August, about 40 sprinkler heads in the computer room's fire prevention system were somehow activated, with the result that the bureau's big Univac 1110 E and its three Univac 1108 computers were doused with water for 5 minutes or longer. Water got into the machines themselves and poured into the space beneath the raised flooring where the computer system's cabling and grid-ground wiring is housed.

Daniel B. Levine, the bureau's deputy director, says that power has now been restored to the system and a painstaking diagnostic process is under way to assess the damage and effect a recovery. He said that at times up to 100 people are engaged in this recovery effort, which the bureau believes can be completed soon enough to avoid major delays in its work.

"I don't think there is any evidence that it [the dousing of the computers] was malicious," Levine told *Science*. But the fact is, nobody knows how the overhead pipes in the sprinkler system became charged with water or why about half the system's sprinkler heads leaked, when supposedly they can be activated only by heat.

Of major concern to the bureau is to avoid lengthy delays in issuing reports on major economic indicators. At this writing, on 17 August, the Univac 1110 E is being put through a trial run with part of the data for the trade balance report that is due 10 days hence.

As a partial stopgap, the bureau is renting time on a computer in Univac's Washington office. Levine says that, while the cost of restoring the computers to service is not yet known, it should not exceed a few hundred thousand dollars.

0036-8075/79/0831-0884$00.50/0

Antinuclear Rally Surveyed

The antinuclear movement in the United States has for the most part developed locally and regionally, as first one then another nuclear power plant project has sparked controversy. But from their survey of the big May 6 antinuclear demonstration in Washington three University of Tennessee sociologists have concluded that opposition to nuclear power is "becoming less fragmented and locally oriented" and that "people and groups in many parts of the country are forming an effective communications network useful in pooling resources and increasing political clout."

The May 6 event, attended by some 65,000 demonstrators (the police estimate), was the biggest political rally to take place in Washington since the civil rights and anti-Vietnam war demonstrations of the 1960's and early 1970's. The three sociologists—Kent D. Van Liere, Anthony E. Ladd, and Thomas C. Hood—divided the huge crowd into zones and distributed questionnaires to 1000 randomly chosen individuals. More than 400 were later returned by mail.

The investigators found that the demonstrators were predominantly "young, well educated, liberal and from urban areas." Nearly two-thirds of the respondents had traveled more than 100 miles to attend the rally, and 10 percent had come more than 600 miles. Almost a quarter of them came with an organized group, and most had first learned the demonstration was to be held not from the news media but from friends, announcements at meetings, posters, and special mailings and telephone calls.

Forty-two percent of the respondents belong to organizations which had taken a position against nuclear power, but many of these some 150 organizations were not antinuclear groups as such. Most respondents had been involved in other "movements," such as those over the Vietnam war and civil rights, but almost half had never taken part in an antinuclear event before. The investigators suggested that this points up the importance of the Three Mile Island accident in fueling "activism against nuclear power." Ninety percent of the respondents want all nuclear power plants shut down. ***Luther J. Carter***

(Continued from page 883)

ber businessman. Even more disturbing to Baron is that doctors are making these decisions with no open discussion of their merits.

However, some doctors and lawyers contend that the courts could never handle all the cases Baron wants brought. To these critics Baron replies that the caseload would not be overwhelming because after awhile some general principles would be hammered out. Then most cases would not have to be brought to court. The appropriate decisions would be clear.

Relman is perhaps the most outspoken critic of Baron's view. "It is a grave misunderstanding of what medicine is about to ask for court-decreed guidelines," he says. He agrees with Baron that too many medical decisions are made on an ad hoc, personal basis and many are made, he says, "almost in a clandestine way." But, Relman explains, "the weakness of Baron's argument is that every patient is different and minor variations are absolutely vital in deciding what to do. The factual basis of these decisions are often very fuzzy and most of the time no one can be sure what the alternatives are." It is not clear that judges would be any better than doctors and families in making these decisions.

Also sharply opposed to Baron, but on legal grounds, is Robert Burt of Yale Law School. Burt believes that courts should not make medical decisions, but should be available to review the decisions after they are made. Thus doctors should be made aware that they are subject to civil or criminal suits if they make a "wrong" decision. "I am asking for doctors to live in some sort of regime of uncertainty," he says. Of course, doctors already live this way in principle, but in practice there have been few, if any, cases in which doctors were prosecuted for withholding treatment. Relman, who basically agrees with Burt, attributes this lack of prosecutions to the fact that the public is only now becoming conscious of the doctors' roles and ethical problems in such treatment decisions.

According to Burt, the problem with cases like that of Saikewicz is that they are not truly adversary in nature but are more often sham proceedings. "Everyone is winking and nodding," he says. Yet, in the Saikewicz case no one wanted to take personal responsibility for the awesome decision to let the man die, especially when it was admitted at the onset that competent patients in Saikewicz's condition nearly always opt for treatment. (Although Saikewicz's court-appointed guardian was given the power to decide on Saikewicz's treatment, he asked the court to approve the decision to withhold treatment.)

As evidence for his belief that no one wanted to decide Saikewicz's fate, Burt refers to the transcript of the lower court hearing. At the end of the transcript, the doctor says he doesn't know what to do; he leaves the decision to the judge. "I don't have that deep knowledge," the doctor says. The judge then said, "I am inclined to give treatment." At this point, the doctor explained that the judge would have to see Saikewicz, that he is wild. "He flails at you and there is no way of communicating with him and he is quite strong." Hearing this, the judge reversed himself and decided against having Saikewicz treated.

Burt points out that in this case, the judge apparently thought he was acting on the doctor's advice. The doctor thought the judge made the decision. Neither was fully responsible. But no one ever tried treating Saikewicz. Burt speculates that if the doctors were concerned about accounting for their decision, they would have at least tried treating him.

To rectify some of these problems, Boston lawyer Neil Chayet proposes what he sees as a way to, as he says, "keep the court in but not in a meddling way." Chayet suggests that a patient representative be appointed by the court to facilitate communication between families of incompetents and doctors. This representative would be a full-time hospital employee and would certify in each case that there is no reason to expect foul play. If the patient has no family, then the patient representative would help make decisions, acting as an officer of the court. Any questionable cases would still go to court. But the patient representative would, by the legal act of certification, allow life-support systems to be discontinued when everyone agrees that is the most desirable course of action.

For all the open discussion of what role the courts should play, it still is not clear what role the Massachusetts court, at least, thinks it is playing. The court's function will only be clarified by other court cases. Relman says things are quiet now in his state. "People are hunkering down, hoping that the whole thing will go away." Yet the Saikewicz decision, he thinks, is like a time bomb. "Sooner or later it will go off. Some family, some nurse, some prosecutor will decide that a doctor violated the law. As long as the [Massachusetts] Supreme Court decision stands, the situation here is very uncomfortable."—GINA BARI KOLATA