cials, and that I should talk to them. It was a strict instruction." Adamkus says that he was "disturbed, almost destroyed" by the conversation, which left a clear impression that Hernandez valued Dow's expertise above that of the agency's scientific staff.

The call from Dow was not long in coming. On the other end of the line was Etcyl Blair, Dow's vice president for health and environmental sciences. "I listened to his comments . . . and I realized that he was reviewing our document," Adamkus says. After telling him to call back, Adamkus visited the authors and "expressed to them my shock that a working document was being reviewed by the outside company involved."

The next call was shunted directly to Milton Clark, the 34-year-old toxicologist who wrote the first draft. According to his testimony, Dow reviewed the document line-by-line. "They thought the title was inappropriate, that it should be changed," Clark says. "We spent several minutes on this." The company requested, among other things, that the report reflect Dow's less alarming estimates of the risks of dioxin exposure. The company also requested revision or deletion of references to miscarriages, reduced fertility, and Agent Orange, a Dow herbicide used in Vietnam.

Simultaneously, Clark and a colleague, David Kee, received several requests for similar changes from EPA headquarters. Paul Brown, co-chairman of EPA's dioxin work group, telephoned to say that "no one here disagrees with your conclusions," according to Clark's notes of the conversation. But publication of the report "would inflame the public." Marilyn Bracken, a deputy assistant administrator, said that the report would have to be changed. "She told me her job was on the line," Clark testified. "She told me Dr. John Todhunter had instructed her" to have certain lines removed. Todhunter directs EPA's toxic substances branch. Clark said that he was told by Donald Barnes, another EPA dioxin expert, that the changes were ordered both by Todhunter and Hernandez. Todhunter has denied it.

The icing on the cake was a call from Blair in which he promised that a final deletion of six lines would win Dow's concurrence with the report's release. The passage at issue indicated that Dow was "the major source, if not the only source" of dioxin contamination in the Saginaw Bay area. By this time, Adamkus says, it was clear that "Dow's comments carried a heavy load with . . . headquarters and that if we wanted a blessing or approval from headquarters . . . we definitely had to do something about it." The report was published in abbreviated form, minus all conclusions, and without a warning against the consumption of fish in the contaminated area. The effect of the omissions was to obscure all potential health hazards, and to produce only a tepid public response.

In his defense, Hernandez says that "I thought it was a very minor kind of thing. If people wanted a copy, I gave it to them." Dow had generated much of the data, he added, "and I felt it was important that we get technical review from the scientists involved." He admits expressing objections to a passage on dioxin and miscarriages, and to the report's conclusions, but he denies ordering any specific deletions. In retrospect, he says, the report should probably have been circulated to parties besides Dow. Dow itself has dismissed the incident as a routine exercise in scientific peer review.

This was, in fact, not the first such incident. Rita Lavelle, the former director of EPA's office of hazardous wastes, urged at one point that a report on an asbestos dump be reviewed by the Asbestos Information Association. Hernandez had previously sent staff reports on formaldehyde and a substance known as DEHP to the Formaldehyde Institute and the Chemical Manufacturers Association for peer review. He subsequently overturned staff recommendations for regulation of these potential carcinogens.

In Michigan, nothing has been done to clean up the contamination described in EPA's report. The reason is that Dow has refused to return Hernandez's favor by supplying internal documents necessary for regulation.—**R. JEFFREY SMITH**

# Revisions in Cancer Policy

## *Rita Lavelle had something to say about cancer risk assessment, House inquiry learns*

Although Administration officials deny that there has been any recent change in the way the government regards cancer-causing substances, several experts in cancer research testified on 17 March that they have discerned a change in the last 2 years. Two of the witnesses described it as a "covert" shift toward tolerating higher public health risks.

This testimony was given in a hearing before the House subcommittee on commerce, transportation, and tourism, which has jurisdiction over toxic waste laws. The chairman, Representative James Florio (D–N.J.), organized the session, he said, to look into proposals which he feared might be the beginning of an effort to "define problems out of existence." Florio is an interested party in a sense: one of the nation's problem dumps is in his state—at Price's Landfill, near Atlantic City. Suspected carcinogens, including trichloroethylene (TCE), have been found in ground water near the dump, raising concerns about Atlantic City's drinking water.

The subcommittee spent most of the day looking into old evidence and asking for comments from federal officials, independent scientists, and experts from environmental groups and industry. Florio's staff also released some new information in the form of policy memos gleaned from the files of the Environmental Protection Agency (EPA). This material was a surprise to most people present and therefore not fully analyzed. For example, acting EPA administrator John Hernandez seemed to have difficulty recalling the memos and was unable to shed much light on them.

Nevertheless, the papers do have an apparent message. They seem to indicate that the top officials of EPA—Hernandez; chief of the toxic waste cleanup program, Rita Lavelle; chief of research, Courtney Riordan; and chief of the office of pesticides and toxic chemicals, John Todhunter—were developing a new policy on carcinogens.

The key document, dated 5 October 1982, is a memo from Lavelle to Hernandez (then second in command at EPA) on a proposal to change EPA's posture on TCE in drinking water. Lavelle wrote to remind Hernandez that he would coordinate two actions: (i) as the "highest

priority," the reevaluation of a health advisory on TCE, and (ii) "The development of a threshold model risk assessment for nongenotoxic chemicals such as TCE." Lavelle added on the second item, "Of course, this should have the blessing of the Science Advisory Board." She appended a draft press release, which was "still in need of Courtney's, Vic's, and Todhunter's sign-off." It was to be the "first step" in "an expeditious, well-conceived, planned, and executed communication to the scientific and regulated communities of our plans for application of 'good science.' "

What she meant by "good science" is conveyed by the attached press release. It suggested that earlier studies indicating TCE is a carcinogen may have been wrong. It quoted Hernandez as saying that, pending further study, it might be best to assess the risks associated with TCE exposure by using techniques for conventional poisons, rather than those used for carcinogens. The press release never went out. Lavelle was not available to comment on her attempt to classify carcinogens into greater and lesser risk categories based on their genotoxicity. However, there are other indications that cancer policy was being revised along these lines.

Three academic scientists who testified agreed that policy was changing. I. Bernard Weinstein, professor of medicine and environmental sciences at Columbia's Institute for Cancer Research, said he saw "a covert attempt to use four issues" in a drive to "soften regulation." The four were (i) a tendency to challenge the validity of rodent tests ("They are valid," he said); (ii) a tendency to act as though there are thresholds for low-level exposure to carcinogens below which no harm is done ("I have seen no recent data to change our opinion" that threshold theories are still "speculative"); (iii) a "distortion of science" in that experimental data revealing differences between genotoxic and nongenotoxic carcinogens are being used to create greater and lesser risk categories before there is proof of a difference in risk; and (iv) an effort to predict carcinogenicity based on a simple reading of the chemical structure of a substance ("We cannot predict this with confidence," he said).

Weinstein's comments were seconded by Norton Nelson, chairman of the board of scientific counselors to the government's National Toxicology Program and a professor of environmental medicine at New York University. Nelson said there is "no serious question" about the validity of risk assessment procedures that were in place 2 years ago. "Why should we not stay with accepted principles and policies until we have had a review under credible auspices?" he asked. "We should not quietly and covertly move away" from established methods.

Like Weinstein, Nelson based his remarks on a few recent memos and policy papers issued by the Administration. The most glaring, he said, is a "remarkable document" written by Todhunter, dated 10 February 1982. It justifies a decision not to rank formaldehyde as a chemical requiring quick attention on grounds that the data on carcinogenicity and on human exposure are weak. "Formaldehyde," Nelson said, "is clearly demonstrated to be carcinogenic for animals," and it "fully meets" all three standards for carcinogenicity set by the International Agency for Research on Cancer. In Nelson's view, it is "irresponsible" to suggest that the data are ambiguous.

**George Keyworth, OSTP director**

*He disagrees that an independent cancer review would be more credible.*

Another expert witness, Henry Pitot, director of the McArdle Laboratory for Cancer Research at the University of Wisconsin, was more circumspect in his comments, but critical of EPA. For the most part, he spoke only about dioxin (2,3,7,8-TCDD), which as a nongenotoxic substance would fall into the lesser risk category in the scheme proposed by Lavelle. Pitot said that he has shown that as little as one-millionth of a gram of dioxin, fed to rodents which have been exposed to a cancer initiator, produces a significant increase in cancer. "I just don't think we have the knowledge" to make a regulatory distinction between genotoxic and nongenotoxic compounds, Pitot said.

Weinstein and Nelson found other evidence of a policy shift in a draft cancer policy document released last year by the White House Office of Science and Technology Policy (OSTP). This paper, they said, was technically weak and pregnant with policy implications not well supported by current science. During the hearing, the director of OSTP, George Keyworth II, emphasized that this had been a preliminary draft. OSTP circulated it "warts and all," he said, indicating "our genuine desire for comments." He stressed that it was not meant to be a policy statement. However, Keyworth conceded that the critical chapter on risk assessment had been written by Todhunter, a political appointee with definite views on how carcinogens should be regulated. Keyworth "completely" rejected Nelson's suggestion that the policy review would gain credibility if conducted by outside scientists.

Keyworth undertook this project at the behest of the White House regulatory reform task force, chaired by Vice President George Bush, whose proposed "hit list" of undesirable regulations was sent out to new federal administrators in the first months of the Reagan incumbency. The task force also serves as a complaint center for industries dissatisfied with government regulation. Keyworth chairs a subcommittee under this task force, the regulatory work group on science and technology. As he explained at length in his prepared testimony, the Administration's goal is "to reduce the excessive burden of federal regulations by improving the rational basis upon which those regulations are made."

The executive director of Bush's task force, Christopher DeMuth, also testified about the need to bring cancer policy up to date. DeMuth, a former board member of the DeMuth Steel Products Company of Chicago, is a young attorney with a keen interest in the economics of regulation.

The future direction of cancer policy is unclear. OSTP is rewriting its summary of the scientific knowledge, with the goal of producing a final draft by June. A set of policy guidelines will appear later, perhaps early next year. Meanwhile, another group has begun looking into the matter in a kind of race to be first with a definitive statement. Nelson disclosed at the hearing that a group of scientists under the auspices of the advisory board to the National Toxicology Program hopes to have its own major review of carcinogen testing procedures completed in 18 months. "It is not being done because of questions about the quality of current techniques," he told the subcommittee. It's just that "All such things need periodic review."

—ELIOT MARSHALL