TCDD in Coal Fly Ash

Scientists at the Dow Chemical Company are naturally interested in the report by B. J. Kimble and M. L. Gross (4 Jan., p 59) "Tetrachlorodibenzo-*p*-dioxin [TCDD] quantitation in stack-collected coal fly ash," in which the authors extrapolate one data point to show that 2,3,7,8-TCDD was not present in fly ash from a "modern power plant." They then extrapolate this result to support a statement that a conclusion reached by Dow scientists in an earlier report (*1*) was "invalid." To resolve the apparent differences we asked the authors to collaborate with us in sampling and analyzing fly ash from the same power plant. We were told that they were not free to disclose the name or location of the powerhouse. We then attempted to obtain the information using the Freedom of Information Act through the Department of Energy (DOE), which operates the Laboratory for Energy-Related Health Research (ERHR) at the University of California, Davis. The reply from DOE states that they checked with the director of ERHR at Davis and conclude that "we have no document or record of any kind which gives the location of the 'commercial coal combustion facility' and I [David A. Smith] do not know its location." Regardless of the quality of the work, the integrity of the report is thus placed in jeopardy, since the source of the sample cannot be identified, and confirmation of the result cannot be made.

WARREN B. CRUMMETT
Analytical Laboratories, Michigan Division, Dow Chemical, U.S.A., Midland 48640

References

1. The Chlorinated Dioxin Task Force, *The Trace Chemistries of Fire—A Source of and Routes for the Entry of Chlorinated Dioxins into the Environment* (Michigan Division, Dow Chemical Company, Midland, 1978).

Time and Effort Reporting: Déjà Vu?

On 6 March 1979, the Office of Management and Budget (OMB) issued a revision of circular A-21. It is the government's theory that it reimburses universities for costs incurred for research only if it agrees that the costs are allowable. Circular A-21 describes criteria for allowability of such costs at educational institutions. The new version requires effort reports, accounting for the time, or "workload," or "effort" of faculty members, and requires a breakdown of these into different categories, such as sponsored research, unsponsored research, teaching, administration, and so forth. The percentages for each must add up exactly to 100. These new regulations are to go into effect on 1 October 1980.

This situation duplicates one that arose in March 1965, but in some respects is worse because the new effort reports must include even more categories. Time and effort reports are meaningless. The battle against them was fought from 1966 to 1968, and won after a vigorous wave of protest at the grass roots. This protest included letters addressed directly to the Bureau of the Budget (BOB) and letters published in *Science* from, for example, George Mackey, former chairman of the mathematics department at Harvard University (2 Sept. 1966, p. 1057) and me (17 Feb. 1967, p. 773; 8 Dec. 1967, p. 1268), and other direct action concerning the reports.

For example, at Brandeis University, a university administrator admitted that the objections against the effort reports were justified but claimed that if professors did not fill them out, then Brandeis would be exposed to the danger of heavy financial loss. Faced with this position, R. Palais and his colleagues felt they had to fill out the reports retroactively, while doing this under strong protest. They specified that this did not imply on their part an acquiescence to the principle of effort reporting, or even an admission that in the academic setting one can be truly honest or meaningful in filling out these forms.

While effort reports were being required by BOB, some professors refused to fill them out, as when Leon Henkin, acting chairman of the mathematics department at the University of California, Berkeley, returned them blank to the university accounting officer on 21 October 1966. Henkin wrote me recently that he never heard again from that officer, and that, to his knowledge, no financial consequences ensued. Persons involved continued to get their grants.

I had given up my National Science Foundation (NSF) grant between 1966 and 1972, because of effort reports and other serious problems in government-university relations during that period.

In 1967, the council of the American Mathematical Society passed a resolution opposing the reports. In 1966, the graduate deans passed the following resolution (*1*):

> Be it resolved that the Association of Graduate Schools instruct its President to call upon the Association of American Universities to join in addressing the President of the United States our respectful requests: 1. that the present requirement for reporting of effort by individual members of the professional staff be suspended immediately because it admits no meaningful compliance.

As a result of the protest, BOB sent a task force out into the academic world to talk directly with the professors. It was headed by Cecil Goode, who wrote me on 5 February 1968: "I hope your confidence in us will prove well founded." The task force ultimately understood our complaints and made recommendations in accord with our point of view (*2*).

> Time and effort reports now required of faculty members are meaningless and a waste of time. They have engendered an emotional reaction in the academic community that will endanger university-Federal relations if relief is not provided. They foster a cynical attitude toward the requirements of government and take valuable effort away from more important activities, not the least of which is the research involved. We need to go to a system that does not require documentary support of faculty time devoted to government-sponsored research. No real evidence of faculty effort is provided anyway under the present system, and there is no way other than the research results themselves to prove how much effort was in fact expended. . . . There is practically no satisfaction with time or effort reporting as presently required, either in the academic community or among the government agencies principally involved in supporting research at universities. Most agencies consider the present requirement unrealistic, unnecessary red tape, and as needlessly complicating government relations with universities. The academic community is virtually unanimous in the opinion that effort reporting is:
>
> —impossible to do in a meaningful way;
>
> —burdensome, taking valuable professional time away from the major tasks at hand;
>
> —useless, in that it is inaccurate and bears little relationship to truth; and
>
> —a dis-incentive to quality research and engenders a cynical attitude toward Government.

Some of the task force's conclusions are also quoted in the *Report of the Commission on Government Paperwork* (*3*), chaired by Representative Frank Horton (R-N.Y.) and Senator Thomas J. McIntyre (D-N.H.).

The Goode task force and its conclusions provided a splendid example of cooperation between the government and the professors. As a result, effort reports, as they had been set forth in 1965, were eliminated on 1 June 1968.

Both in 1965 and in 1979, revision of circular A-21 to include effort reports resulted from pressure by the universities to recover more money from the government for the direct and indirect costs of research. It followed long negotiations (about 2 years) between government officials (from BOB in 1965 and OMB in

1979) and business officers of universities. Both times it appears that the business officers were unable to achieve appropriate results or properly represent the professorial position, for whatever reason. I have received contradictory accounts of the negotiations, both in 1965 and in the more recent period. One states that the business officers apparently did not realize the implications of the effort reports for academic personnel (or even worse, sold out the professors); another states that effort reports were imposed unilaterally by the government, and (in 1967) that I was naïve if I thought that the business officers, the presidents, or the mathematicians could have prevented the inclusion of some kind of time and effort reporting in circular A-21. Although I grant the best motivation on the part of the business officers, I was and am again concerned with the results of the negotiations.

The position that the government is entitled to accounting for its support is entirely legitimate; neither I nor my colleagues who object to effort reports have ever been against proper accounting. The objections are against meaningless accounting, or accounting improper in the academic setting. For example, several different government agencies may support a research project together. Accountants may think it reasonable to know precisely which parts have been funded by which agency. However, researchers cannot compartmentalize their work in that fashion, and they are sometimes led to transfer charges between closely related grants. Accountants may then see "abuse" when none exists according to the soundest research practices. On the other hand, over the last few years, there have been a few documented cases of abuse or errors, as when a university has charged erroneously a faculty or staff member's salary to a grant when the individual was not working on that project. I am informed that the total amount of money involved in such cases is extremely small compared to the total amount invested by the government in the universities. But if there is some need to reimburse, why impose meaningless requirements on others? In addition, the audit of new meaningless reports will open the door to further misunderstandings, a vicious circle which should not be allowed to develop.

As in 1968, the government should acknowledge that it is supporting intellectual activities which cannot be measured or accounted for in the same way as, say, the production of material items. In his letter to *Science* in 1966, Mackey observed that the act of signing effort or time reports causes a professor to ratify a change of his status from that of "independent thinker, partially subsidized so as to have the leisure to think, to that of a professional, employed to do a job." He wrote further:

One can sympathize with the desires of men charged with the supervision of vast sums of money to see that the money is well spent. However, I believe that vigorous protests are in order when their well meant efforts are insensitive to important differences between an academic appointment and most kinds of employment and when this insensitivity puts men into impossible positions and threatens delicate but valuable institutions.

On 14 December 1979, Yale University's Deputy Provost Charles Bockelman wrote me:

When we were apprised of the pressure for efforts reporting, Yale tried in a variety of forms to express its vigorous opposition. . . . It does seem to me Yale has done all it can through institutional channels. The voices of individual professors may be more effective.

Furthermore, on 19 February 1980, NSF Director Richard C. Atkinson wrote me:

I have followed your correspondence on "effort reporting" with great interest. The government bureaucracy is educable, if one can get their attention. Your approach and tenacity may be what is required to have an effect on these issues.

I hope that many professors will contact OMB Director James McIntyre (Executive Office Building, Washington, D.C. 20503) or Presidential Science Adviser Frank Press (same address) to make themselves properly understood. Such direct appeals are not "naïve." I have no reason to doubt that a result similar to that achieved with the Goode task force will be obtained, except that instead of taking 2 years as it did in 1966–1968, it will take only a brief period because of the past experience, precedent, and mutual understanding.

SERGE LANG
Department of Mathematics,
Yale University,
New Haven, Connecticut 06520

References

1. *J. Proc. Assoc. Grad. Schools* (1966), p. 126.
2. "Time or effort reporting by colleges and universities in support of research grants and contracts: A report by a task force comprised of representatives from the Bureau of the Budget, the General Accounting Office, the Department of Defense, the National Science Foundation, and the Department of Health, Education, and Welfare" (available from the Office of Management and Budget, Washington, D.C., 1968).
3. *Report of the Commission on Government Paperwork* (Government Printing Office, Washington, D.C., 1977), pp. 19–20.

Erratum: In the article "The business of science" (News and Comment, 1 Feb., p. 507), on line 19, the turnover of Schering-Plough stock on 17 January was cited as having been "better than 128 million" shares. The correct figure is 1.29 million shares.