

some way of knowing what number he has called, so you know which Joe in the universe of Joes he might be calling," says one source.

Trudy Hayden, director of ACLU's Privacy Project, says that the pen register issue is of growing concern among civil libertarians, and one that "civil libertarians should pay closer attention to."

And David Watters, a congressional consultant who is Washington representative of the American Privacy Foundation, believes that they pose two problems. First, extended pen register surveillance of someone's phone activity—of whom they call on when, and how long they talk—can lead to a "behavioral profile" of an individual that violates his expectation of privacy.

Second, Watters notes, once a pen register is legitimately installed, its operator could be sorely tempted to engage in illegal eavesdropping, merely by plugging in a voice-activated tape recorder to the device, and without the knowledge either of the court that ordered the pen register installed or the phone company that helped install it.

AT & T's Caming confirmed that the phone company would in all likelihood have no knowledge of how the pen register was used once it was installed. "We do not allow law enforcement personnel to work in our offices, and we would not want to know, or be involved in, their use of pen registers. We don't even know whether the pen registers are used or not."

A Senate source likens pen registers to "mail cover" operations by law enforcement officials. Under present rules, law enforcement officials may ask the Postal Service to show them—subject only to some postal guidelines—all the incoming and outgoing mail from a given place. The purpose is to enable them to record the outgoing and incoming addresses and

learn who is in contact with whom—information that is analagous to that collected by the pen registers.

But the 1975 Senate investigation of intelligence abuses, headed by Frank Church (D-Idaho), found that the CIA used mail cover operations for some 20 years as a camouflage for illegally opening the mail and reading it. Postal authorities protested that they cooperated with the CIA and provided its agents with mail going to and from the United States and the Soviet Union, in the belief that the CIA was merely recording the addresses on the envelopes. Postal officials said they did not know that the CIA was actually steaming open the letters and illegally reading the communications of American citizens who were in contact with people in the Soviet Union. The point is that pen registers, like mail cover operations, tempt whoever is conducting legal surveillance to go one step further and do something illegal.

This temptation is one reason ACLU's Hayden is alarmed by the Supreme Court decision. "The effect [of the decision] would be, I would speculate, to make the pen register more attractive as an investigative device, especially if there are increasing restrictions on the use of wiretaps in law enforcement activities. Moreover the Supreme Court did not require that pen registers meet the same procedural standards of relevance and necessity now required for wiretaps."

One reason for urgency, in Hayden's view and that of others concerned with privacy, is that with the advent of ESS pen registers are being replaced by the technology that will be capable of getting the same information at a flick of the switch, instead of adding a suitcase sized device to a leased line. Telephone company switching stations around the country gradually are replacing the older systems with ESS. Among other features, the ESS has a special program that

does the equivalent of placing a pen register on the line. The resulting record of all numbers called and how frequently they were called will be kept indefinitely with other phone company records.

Hayden of the ACLU sees the pen register controversy as the stalking horse for another upcoming issue. Once modernized with ESS, the phone company will then be able to implement "usage sensitive pricing" (USP). With USP, the company will automatically record the numbers, dates, times, and durations of local, as well as long-distance calls; it will then be able to bill customers for local calls on an individual basis just as long-distance calls are billed now.

Hayden wrote in the June 1977 issue of *Privacy Report* that there are 15 times as many local calls as there are long-distance calls (there were 127 billion local calls made in the United States in 1973). So with USP the telephone company and its affiliates will be keeping vast amounts of private information on their customer's activities. "The pen register does in specific and deliberately chosen instances what USP will do automatically for all of us—it creates a complete profile of a person's telephone communications."

She wrote that this information will be available to "the government" if it produces an administrative subpoena, summons, or court order. Although individuals are meant to be notified when their phone records are being subpoenaed, she wrote that, under present practice, this requirement is waived 85 percent of the time. The article called on local public service commissions to take these privacy considerations into account in deciding whether to allow implementation of USP and added, "This might . . . be one of the few times the public may be able to deal with a potential hazard to privacy before the situation gets out of hand."—DEBORAH SHAPLEY

Polling the Professors: Survey Draws Protest

Last spring, two social scientists sent copies of a long questionnaire to 9000 faculty members of American colleges and universities, for the stated purpose of formulating sound educational policy. The survey designers, Everett Carll

Ladd, Jr., of the University of Connecticut and Seymour Martin Lipset of Stanford University, periodically survey faculty opinions. They stimulated an unusual response with this questionnaire, however. A small but vocal group of

mathematicians protest vigorously Ladd and Lipset's methods and purposes and are making their objections known.

Lipset has borne the brunt of the criticism, in part because he is better known than Ladd and in part because he seems to answer all letters from the mathematicians criticizing the survey—even those letters addressed to Ladd. (Ladd claims he never received a letter addressed to him, although several were sent.) Lipset says the severe criticism of his most recent survey is unprecedented. But he suspects, and rightly so, that the critics are led by one particular mathemati-

cian—Serge Lang of Yale University. The story of Lang's protest movement is a story of politics and personalities as well as what some sociologists believe are valid, if not long-needed, criticisms of the methods of survey research and the possible uses and effects of such survey data.

Lang, a thin, nervous man who likes to hold court when in the company of mathematicians, is able to command attention by dint of his considerable reputation as a researcher. He has expended much time and effort analyzing the survey questions and letting his colleagues, Ladd, and Lipset know that he finds the questions unsuitable for probing faculty opinions on complex and controversial matters involving politics, research, and education. A separate but related issue is that Lang distrusts Lipset's political leanings. He asks how Lipset will inter-

pret the survey data and what effects Lipset's interpretation will have on educational policy.

Since last April, when he first wrote to Lipset and Ladd criticizing their survey, Lang has recruited a number of mathematicians and a few social scientists to his cause. The mathematicians include leaders in their fields, such as John Tate of Harvard, Saunders MacLane of the University of Chicago, and Lipman Bers of Columbia University. Tate and MacLane, in particular, are not known for taking public stands on issues. Encouraged by his supporters, Lang is hanging onto this issue as tenaciously as the Old Man of the Sea hung onto the back of Sinbad the Sailor in the tale from *The Arabian Nights*.

The survey that raised Lang's ire is a long one consisting of 128 questions, many of which have several parts. It

deals with faculty attitudes toward such issues as research and research funding, collective bargaining, and early retirement. In addition, it includes questions about political, social, and moral convictions of the professors.

The survey responses are now in, and Lipset and Ladd report that almost 50 percent of those who received the survey filled it out and returned it. Since September 1977, Lipset and Ladd have been publishing analyses of the survey data in the *Chronicle of Higher Education*. According to Malcolm Scully of the *Chronicle*, no one but Lang has written criticizing the survey.

Lang's protest began shortly after the survey was distributed last spring. At that time, he read a review of a book by Lipset and David Riesman entitled *Education and Politics at Harvard*. The review, written by Sigmund Diamond of

Briefing

Sakharov Lauds U.S. Society for Strong Stance

Andrei D. Sakharov, the Soviet Union's most prominent dissident scientist, has written a letter of commendation to the Association for Computing Machinery, which, last year, became the first U.S. scientific society to sever its contacts with the Soviet Union over the human rights issue.

In the letter, received 6 January, Sakharov said the ACM had "hit the right nail" when it severed dealings with the Soviet Union over the imprisonment of Anatoly Shcharansky, a young computer scientist whose application to emigrate to Israel was refused. Shcharansky's cause has also been taken up by the State Department and numerous private organizations. Sakharov wrote:

"The Soviet authorities extremely appreciate the cooperation in science and technology, thus there is nothing to induce them so factually and effectively as a refusal to maintain this cooperation. . ."

Last July, alarmed by developments in Shcharansky's case, ACM president Herbert R. J. Grosch wrote to the Soviet Academy of Sciences saying ACM would no longer cooperate in or cosponsor meetings held in the Soviet Union. The move was approved in October by the council of the 36,500-member ACM. In November, Grosch wrote an even tougher letter on behalf of ACM, this one to So-

viet Ambassador Anatoly Dobrynin, adding that ACM would avoid other, Russian-dominated international meetings, too. He even noted how much the Soviets would suffer from lack of contact with American computer science, because "the U.S.S.R. lags far behind my country in both building and using these fantastic tools."

In severing ties, ACM has taken a step which many other U.S. professional societies have refused to take on the grounds that they would offend the Soviets or provoke further mistreatment of dissidents. But Sakharov wrote: "Do not take seriously any assertion that your decision could only embitter the Soviet authorities and aggravate the situation of Soviet scientists. Do not doubt that your . . . solidarity will bring positive results."

Carter Nuclear Satellite Ban Could Hurt Research

President Carter's suggestion that the United States should "forego" earth-orbiting nuclear powered spacecraft if they cannot be made "failsafe" from accidents—such as the recent fall to earth of one such Soviet satellite—could affect U.S. research. The Department of Energy (DOE) conducts an active research program in developing nuclear power sources for spacecraft, and the Administration's proposed fiscal 1979 budget

contains \$20 million for such projects, including a joint mission with Europe.

Only one of the four projects would be exempt from Carter's proposed ban, according to DOE sources, since only one is a deep-space probe that would not orbit the earth. This would be for a nuclear power source for the next Jupiter mission, scheduled for launch in 1983. The United States has put nuclear power sources aboard only 23 of its 2000-odd spacecraft it has launched since 1958. It tends to use nuclear power for missions far from the sun, where solar panels are less feasible.

Carter's proposal to forego nuclear power on earth-orbiting satellites could conceivably affect a joint American venture with the European Space Agency for a solar-polar mission. This would consist of two satellites to be launched in February 1983 from the space shuttle. Each would be powered with two 100-watt radioisotope generators, sources of low-level nuclear energy.

The DOE also plans research on a slightly more powerful nuclear source, a "dynamic isotope" system, which would produce power in the 1- to 2-kilowatt range, for the Air Force.

Finally, reflecting increased concern in military circles about making future American spacecraft invulnerable to Soviet attack, the DOE seeks \$2 million for a study at the Los Alamos Scientific Laboratory for a full-scale space reactor, fueled with plutonium, that would produce up to 100 kilowatts of energy. The military has planned for some time to

Columbia University, appeared in the 28 April 1977 issue of the *New York Review of Books*. In his review, Diamond accused Lipset of glossing over an episode at Harvard in which Diamond was denied a job—allegedly on political grounds.

Lang received a copy of the survey and, provoked by Diamond's review, fired off a hostile letter to Lipset and Ladd, which he describes as "vintage Lang" (blunt and abrasive). In the letter, he impugned Lipset's scholarship and integrity. He cited Diamond's review as evidence of Lipset's bias and "cover-up abilities."

From this inauspicious beginning, a protest movement grew. As Lipset answered Lang and other mathematicians wrote to Lipset, more and more mathematicians were recruited by Lang to the movement. The protest took on the air of

a personal matter, fueled by almost childishly nasty remarks in letters from some academically prominent people. Lang, however, believes that the issues being debated are serious and denies that he is waging a vendetta. "I have some apprehension that already I have been too much sucked into this thing," he says.

Lang and his supporters claim the questionnaire has two major, but related, flaws. First, many of the questions are worded so that either their meanings are ambiguous or, as Lang puts it, the issues are prejudiced. Second, when questions are worded in biased ways, undue emphasis can be put on relatively unimportant issues when the analyses are reported. Thus the issues can be altered by the measurement process. Lang calls this the "Heisenberg principle of the social sciences."

Lang has written a 15-page critique of the survey, detailing his objections to specific questions. One group of questions he objects to deals with grading. Respondents are asked to note whether they agree with statements by checking boxes marked "Definitely yes," "Only partly," or "Definitely no." For example, one statement is "'Grade inflation' is a serious problem at my institution."

In analyzing this question, Lang first points out that it can be interpreted in several ways. Suppose that a person checks "Definitely no." The respondent could mean that grade inflation is not a problem per se, that it is a problem but not at the respondent's institution, that it is a serious problem but not a serious problem at the respondent's institution, or that it is a problem per se, but not a serious one.

Briefing

launch larger spacecrafts from the space shuttle, and many of these would be put in a very large earth-orbit, where solar panels may not be feasible as a power source. In addition, the military envision doing away with the bulky, conspicuous solar panels on many of its close-in satellites and powering them with nuclear reactors instead. Finally, nuclear reactors could serve as power sources for future, space-based laser weapons. Hence, the Department of Defense interest in the Los Alamos research project.

But the crux of the President's remarks was that the United States would give up nuclear power sources only if they cannot be made "failsafe" against the kind of accident that occurred to the Soviet satellite, which began an unsteady, descending orbit several weeks ago and landed unpredictably in the Canadian wilderness. Officials in DOE and at Los Alamos told *Science* that their new systems could be made fail-safe.

ACS Group Urges Anti-Smoking Drive

The National Commission on Smoking and Public Policy, an offshoot of the American Cancer Society that was founded with a \$168,000-grant 1½ years ago, has issued a stiff report recommending many policy changes, both on the part of the federal government and

organizations like the ACS to combat smoking in the United States. The commission's recommendations are far more sweeping than the "vigorous new program" to combat smoking announced in early January by the Secretary of Health, Education, and Welfare (HEW), Joseph A. Califano, Jr.

The commission's report recommends a wide range of federal actions, including that the Department of Defense stop selling cigarettes free of taxes at PX's, where a pack of cigarettes can sell for from 7 to 10 cents. It also recommended the adoption of a graduated cigarette tax that would make cigarettes more expensive as their tar and nicotine content increased.

The commission also echoed the view of some consumer activists that the Food and Drug Administration (FDA) should regulate cigarettes. It urged HEW to seek clarification from Congress, so that FDA will have this authority. In the past FDA has said it lacks authority to regulate cigarettes.

(In a similar vein, Action for Smoking and Health, a Washington consumer action group, has petitioned the FDA to regulate cigarettes both because the nicotine they contain is a drug and because cigarette filters constitute "medical devices" under FDA rules. The petition is still being considered by FDA.)

The commission report also chided the American Cancer Society (ACS) and other large private organizations concerned with public health for not having devoted more money and attention to the health

hazards of smoking since the Surgeon General's report was issued 14 years ago. It recommended that ACS, for example, spend the maximum allowed by law on public education and lobbying to cut down the incidence of smoking, which overall has not changed since 1964. The ACS currently spends about \$200,000 annually on smoking-related matters. Its annual budget is more than \$100 million. The advertising budget of the tobacco industry is estimated to be more than \$400 million.

John Banzhaf, director of Action on Smoking and Health, calls the recommendations for ACS and the other large private health organizations among the most important in the report, since, in his view, the efforts of such powerful groups could be instrumental in getting Congress and federal agencies, such as HEW, to take action.

Califano announced an HEW program to combat smoking on 11 January, but it was limited largely to actions within the department, such as making it harder to smoke in HEW buildings, and things he will recommend to other groups, such as the Federal Trade Commission and the broadcast networks. The most weighty part of the Califano plan was to elevate the Clearinghouse on Smoking and Health to a more conspicuous place in the HEW hierarchy, and to try to increase its budget from \$6 to \$23 million. After they were issued, Califano's proposals were criticized by consumer groups as too weak, and by the tobacco industry as too strong.

Deborah Shapley

In addition, Lang says, the question's wording reflects a bias against grade inflation and puts the respondent somewhat on the defensive about it. According to Lang, the impression given is that "grade inflation, like a disease, is bad in itself and the surveyors want to know if you've got it or not."

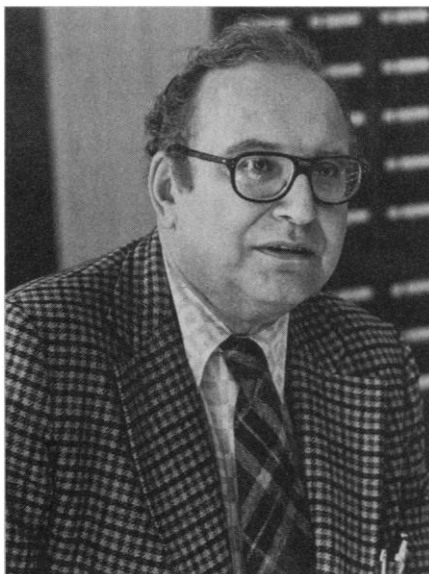
Lang also objects to this question on the grounds of the Heisenberg principle of the social sciences. Even those who answer "Definitely no" admit that grade inflation is a problem (unless Lipset and Ladd interpret the "Definitely no" answers as meaning that it is not a problem *per se*). Lang says that, "By harping on grading, Lipset and Ladd contribute to giving grades more importance than some people think they deserve. They emphasize a question of journalistic interest, like grading, which is sometimes interpreted as reflecting a strict versus a permissive frame of mind—a prejudicial choice."

One sociologist who agrees with Lang's criticisms is Marion J. Levy, Jr., of Princeton University. Levy believes that Lang's criticisms are "disturbing and far-reaching," and that they apply to most survey research. An enormous bulk of research in the social sciences involves surveys, according to Levy, and the statistical techniques for selecting samples and analyzing data are well developed. "But the questions themselves are unbelievably naive and primitive," he says.

Some other social scientists say the survey by Lipset and Ladd is worse than most. For example, Charles Hamilton, a political scientist at Columbia University, finds the questions unusually biased and says, "I would not support a questionnaire that closed off the choices the way Lipset and Ladd do."

Lang and other mathematicians, such as Neal Koblitz of Harvard University, feel that many of the questions are biased toward a conservative political viewpoint. For example, one question asks respondents whether they agree that "Economic growth, not redistribution, should be the primary objective of American economic policy." Lang notes that this and other questions "are typical of a prevalent political and economic rhetoric in the ways they pose alternatives." He objects to having to choose between only two alternatives—growth or redistribution—as "the primary objective of American economic policy."

Frank Riessman, a sociologist at City University of New York and an editor of the journal *Social Policy* says he is shocked by the way the survey questions



Seymour Martin Lipset

are politically slanted. The questions could easily be rephrased to avoid this, he points out; he remarks that he is "rather appalled that sophisticated people such as Lipset and Ladd have not controlled their biases."

These biases are apparent all through the questionnaire, according to Riessman. For example, a question in the section on the financial state of American higher education asks respondents if they agree that "The cost, in dollars and time, of federal regulations now constitutes a major burden on institutions of higher education." Riessman notes that one could agree with this statement and still hold the view that the burden is necessary and valuable for aiding minority groups. "The statement is slanted toward the view that federal regulations should be cut out," Riessman says.

Lipset refutes the criticisms of his survey by explaining that the critics do not really understand the aims or nature of his research. For example, they pick on what they see as ambiguities in the interpretations of specific questions. But, Lipset says, in survey research no one question is intended to reflect attitudes of respondents. He and Ladd are looking for patterns of responses to related questions. Thus they are not looking for what percentage of the respondents say grade inflation is a problem but are looking at how answers to this and other questions on grading vary with institutions. He and Ladd are aware of the problems of phrasing questions unambiguously. "I hate to pull rank on these guys," he says, "but sociologists have been in the business of survey research for more than 40 years and are aware of complexities more than Lang realizes."

Lipset agrees that the Heisenberg principle often is a problem. "I have written quite a bit on this matter," he says. He explains, however, that it is the nature of scientific research to investigate hypotheses and to impose order on subjects being studied. This means that surveyors often ask about attitudes toward various issues, even if the very asking exaggerates the significance of the issues.

As for his political bias, Lipset views himself as "generally liberal," although he admits that others have said he is a neoconservative (a term used to denote those who question the usefulness of existing and proposed federal programs). His writings have been attacked by both liberal and conservative groups, he says.

Lipset claims that some of the political questions criticized by Lang and his supporters were taken from previous Gallup and Harris polls. He says he and Ladd included these questions in order to compare the responses of faculty members to those of the general public.

It is difficult to say whether data from the current Lipset-Ladd survey or previous surveys have affected educational policy, especially since policy-makers are free to cite survey results to back up their preconceived notions in place of using the data to formulate ideas. Marcus Raskin of the Institute for Policy Studies in Washington, D.C., refers to survey data as a "legitimizing instrument." He believes that policy-makers almost never use survey results to formulate ideas. Levy disagrees, saying that decisions are at times made on the basis of survey data.

Ladd says that policy-makers are at least very interested in his and Lipset's results. Within the past 2 months, he has received inquiries about their data from groups such as the National Science Foundation and the Sloan Commission on Higher Education. He and Lipset have been asked to speak about collective bargaining to faculty groups and academic unions. Ladd says he receives countless requests for reprints of articles on collective bargaining that he and Lipset wrote in conjunction with previous surveys. "Policy-makers take our material seriously," Ladd notes.

Lang and his supporters are also convinced that Lipset and Ladd wield a great deal of influence. "Lipset is very much accepted uncritically, and he disposes of tremendous means to push his point of view," Lang says. He explains that McGraw-Hill published one of Lipset's books, the Carnegie Foundation subsidizes his work, and the *Chronicle of*

Higher Education publishes long series of articles by him. In addition, Lipset has been quoted and cited uncritically in such places as *Newsweek*, *Science*, and the *Washington Post*. This acceptance of Lipset's work may be justified, of course, but a number of sociologists, such as Raskin and Levy, question the meaning of survey data in general.

Even if this small protest against Lip-

set and Ladd's survey has no further consequences, the types of objections to the survey and the fact that mathematicians are the primary objectors are of interest in themselves. Levy notes that mathematicians are trained to be scrupulously careful about the way statements are phrased and are well aware of the fact that sophisticated statistical analyses cannot make up for biased data. Rob-

ert Wuthnow and James Beniger, two sociologists at Princeton who were trained in survey research, say Lang's criticisms are good for the profession. They believe there is a trend toward emphasizing sophisticated analyses of data rather than toward formulating good questions. They hope that the protest led by Lang will help swing the pendulum in the other direction.

—GINA BARI KOLATA

Science in Europe/Britain Opting for U.S.-Style Reactors—Maybe

After an argument lasting for almost 13 years, Britain is tiptoeing toward a controversial decision in favor of purchasing Westinghouse-designed pressurized water reactors (PWR). A firm order for a PWR is unlikely until the early 1980's, but even the vague commitment to the system which the government is expected to announce within the next 2 weeks marks a radical and traumatic shift away from the British gas-cooled reactors which have so far been the mainstay of the nuclear program.

The commitment might have been stronger but for a last-ditch defense by the Energy Secretary, Mr. Tony Benn, backed by several Cabinet colleagues, who favored continued reliance on the advanced gas-cooled reactor (AGR) despite the enormous problems which have delayed the building of the first five AGR power stations. They were opposed by another group in Cabinet, including the Chancellor of the Exchequer Mr. Denis Healey, who favored a switch to the PWR, which has emerged in the past few years as the world's dominant reactor design.

At a meeting before Christmas the Cabinet was split, and Mr. Benn, as the minister directly responsible for the decision, was sent away to devise a compromise acceptable to all. The result is a plan which offers comfort to both sides: two final AGR's will be ordered, one for Scotland and one for England; and a commitment to the PWR is made which falls short of an actual order but is definite enough to allow safety and design studies of the system to go ahead with the prospects of an actual order in about 1982.

The prospects of the PWR gaining a foothold were denounced by Friends of the Earth, the most vocal and effective environmental group operating on the nuclear issue in Britain. In a letter to the Prime Minister, Friends of the Earth director Tom Burke and its leading theoretician, Amory B. Lovins, said there were compelling reasons why the government should not buy pressurized water reactors. They claim that the PWR has been sold around the world not on technical or economic merit but by a process of "mutual intoxication"; Westinghouse's "aggressive use of loss leaders" persuaded France to abandon its home-grown reactors and U.S. promotional institutions persuaded buyers all over the world that the claimed advantages of the PWR were real. All vendors of light-water reactors suffered losses, Friends of the Earth said, adding that "the notion that British vendors new to the game could out-Westinghouse Westinghouse is preposterous—save as regards potential losses."

Dudgeon over Dungeness

The battle against the PWR is part environmentalism, part nationalism, and part reluctance to abandon a line of reactor development with more than a quarter century of work behind it. The argument began in 1965 when, in a famous and much disputed "assessment" which compared the AGR with the light water reactor, the Central Electricity Generating Board found the AGR a cheaper option. As a result the board placed what was probably its most disastrous contract ever, when it ordered an AGR at Dungeness, in Kent. More than 10 years

later, the reactor is still incomplete, hundreds of millions of pounds over budget, and still some way from producing power.

By 1974 the central board was so disillusioned with the AGR that it went flat out for the PWR, but ran into a blizzard of environmental and safety objections. Another "assessment" was made, and came up with yet another answer, this time favoring the steam-generating heavy-water reactor (SGHWR), a British design which had never been built as a commercial plant, only as a 100 megawatt (electric) prototype. The SGHWR was chosen, anointed, and made ready for ordering; but the detailed costing showed it to be hopelessly uneconomical and by mid-1976 its chances were dead.

This long history of indecision—or rather of decisions made and then as quickly abandoned—has left the nuclear industry demoralized. It has spent the past few years trying to build the five AGR power stations on order. Two are now complete and functioning, though neither is up to full power and one suffered a breakdown in one of its reactors when seawater was inadvertently allowed to leak into a cooling circuit. The other three are still under construction. Each differs slightly from the others, which means that the nuclear industry has in fact been engaged in building five full-scale commercial prototypes simultaneously, not a recipe for an easy life.

This was the setting for yet another assessment, launched by Benn in October 1976 to compare AGR, PWR, and SGHWR. The comparison was made by the National Nuclear Corporation, which concluded that the SGHWR was the worst bet economically, the PWR the best, and the AGR lay somewhere between the two extremes. The assessment eliminated the SGHWR but rather than coming down clearly for either of the other two systems suggested that both should be built.

This conclusion owes as much to political calculation as to economic logic. Most of the industry strongly favors the