

Clinton Apologizes for Cold War's Radiation Experiments, Which Panel Says Created a 'Legacy of Distrust' in Science

All modern governments work aggressively to conceal their actions on a wide range of topics, from national security to scientific research with military implications. Sometimes the purpose of secrecy is to keep important information from falling into enemy hands. At other times it is to avoid embarrassing the government or exposing its officials. Under Richard Nixon, possibly the most secretive of US presidents, millions of documents prepared during World War II were declassified. By contrast, the Clinton Administration has boasted about its openness, but in its first two years it classified more documents than it declassified. Still, President Clinton signed Executive Order 12958, which went into effect on 16 October, promising to let loose an avalanche of records now more than 25 years old. In anticipation of this, on 3 October, at a ceremony in the Old Executive Office Building, Clinton released the final report of the Advisory Committee on Human Radiation Experiments. The report tells a grim saga of abuses and insensitivities by physicians, physicists and other researchers over three decades of government-sponsored radiation tests on mostly unsuspecting subjects.

The experiments varied widely. In 1944, before the first atomic bomb was tested at Alamogordo, the Manhattan Project had contracted with the universities of California at Berkeley, of Chicago and of Rochester to gather data on patients who would be injected, without their consent, with plutonium, polonium and uranium. The putative purpose was to develop radiation exposure standards for workers in nuclear laboratories. In the late 1940s to the early 1950s physicians and physicists studied the results of dozens of intentional releases of radiation into the environment at the Army's Dugway Proving Grounds in Utah for a program the Pentagon called "Rad War." In another secret series of tests, radioactive substances were released into the atmosphere and sprayed onto fields to determine shielding requirements for radiation-measuring instruments. During the 1950s retarded children at Fernald State School in Waltham, Massachusetts, breakfasted on oatmeal laced with plutonium to test their reactions.

Surprisingly, few people were seriously harmed or killed by the medical experiments and environmental releases of substances that virtually

everyone at the time agreed were hazardous. After considering nearly 4000 previously classified experiments approved by the Manhattan Project, the Atomic Energy Commission and other Federal agencies over a 30-year period beginning in 1944, the committee concluded that the actions constituted a "legacy of distrust." But equally surprising, few real villains emerge from the advisory committee's meticulous reconstruction of events.

In his remarks, Clinton praised the 14-member committee, which he appointed in January 1994 to review Federal involvement in secret radiation experiments and to determine what—if any—steps should be taken to compensate victims and ensure that the same thing does not happen again. The committee's verdict, Clinton was told by Ruth R. Faden, director of the Bioethics Institute at Johns Hopkins University and the panel's chair, was that wrongs were clearly committed. "In the pursuit of peace and the advancement of medicine—certainly two laudable goals—the rights and interests of individuals and communities were sometimes ignored. We found that government officials and physicians, who had the trust of the public and their patients, abused that trust," said Faden at the 3 October ceremony. "What most troubled the committee was the lack of respect for the American people that seemed to permeate the conduct of research. The period we examined was defined by arrogance. People had trust in their doctors, but the doctors who did the research often took advantage of that trust."

'A moral responsibility'

"When the government does wrong, we have a moral responsibility to admit it," Clinton told an audience that included members of the committee and a few individuals who had unknowingly participated in the radiation research. "It offers an apology to the survivors and their families and to all the American people, who must be able to rely on the United States to tell the truth and do the right thing." Clinton also directed his Cabinet to set up a system for helping the victims of the secret experiments, "including compensation that meets the standards of justice and conscience." Noting that the committee found "serious deficiencies" in current ethical policies and practices, Clinton an-

nounced the creation of the National Bioethics Advisory Commission to address the problem.

When he finished his statement, Clinton stepped into the audience and was directed to Emma Craft of Nashville, Tennessee, whose daughter died of cancer in 1959. Craft believes her daughter was injected with radioactive iodine as part of a government-funded study at Vanderbilt University Hospital in 1948. The Vanderbilt study is now the centerpiece of a class-action lawsuit and is documented in the committee's report.

After 18 months in which it gathered and reviewed hundreds of thousands of documents and held 31 days of open hearings around the country, the committee came up with 18 recommendations. These included new laws to safeguard the public against research abuses in the future and adoption of a Federal policy requiring informed consent prior to subjecting individuals to classified experiments in the interests of national security. The committee also recommended that participants in three studies—about 30 individuals in all—should receive Federal compensation for being subjected to hazardous experiments without their knowledge, sometimes with severe medical consequences.

The report is unusual for the breadth of historical information in its 925 pages. An introductory chapter tells the story of Wilhelm Röntgen's discovery of x rays a century ago (see the article by Howard Seliger on page 25) and the follow-up work of Henri Becquerel and Marie and Pierre Curie. It examines the impressive success of radiation in destroying tumors and the distressing dangers to radiologists and researchers who became victims of their science.

It describes how Ernest Lawrence's cyclotrons became factories to produce radioisotopes to treat various cancers and notes that the age of nuclear medicine probably began in November 1936 at a lunchtime seminar at Harvard, when MIT President Karl Compton spoke on "What Physics Can Do for Biology and Medicine." The government's official participation is said to have begun in November 1942 when Brigadier General Leslie Groves, director of the Manhattan Project, appointed Stafford Warren, a radiologist at the University of Rochester, to head the bomb program's medical research. The need for secrecy, Warren later wrote in a

memo found by the Faden committee, compounded the urgency of understanding and controlling the risk of radiation. If accounts of death or toxic hazard were to leak to the public, Warren stated, the project's cover could be blown.

The report also provides a sorry tale of cold-war practices by the medical bureaucracy involved in medical radiation experiments. A major feature of this landscape was the Nuremberg Code, a powerful statement of principles that came out of the court trial of Nazi physicians who conducted medical experiments on concentration camp inmates. Among the code's provisions were that subjects of medical research must give their consent, that the research must be for the good of society and "not random in nature," that risk must be minimized and that

subjects must be free to remove themselves from the experiments at will.

Some of these principles were discussed as early as April 1947, when Carroll Wilson, the Atomic Energy Commission's general manager, wrote to Manhattan Project officials, pointing out that "clinical testing" of hospital patients could go forward only if there was a prospect of medical benefit to the individual and if the subject's consent was documented. The Faden report says Defense Secretary Charles Wilson adopted the Nuremberg Code for atomic, biological and chemical warfare research by the military in 1953, but the action was marked secret and not made known until 1975. The committee found little evidence that the government made a concerted effort to inform its researchers about the new rules or to

clarify many ambiguous issues—notably what "consent" meant in practice.

Curiously, the Faden committee observes, national security was virtually never cited by either physicians or government officials as a reason to keep most of the experiments secret. The committee's examination of the records revealed that important discussions of policies on human experiments took place in secret for fear of embarrassing the government and officials, of causing potential legal liability and of raising doubts among the public that might jeopardize the program.

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Copies of the report can be obtained by writing to the US Government Printing Office, P. O. Box 371954, Pittsburgh, PA 15250-7954, or by calling 202-512-1800.

Clinton Directive Gives Nuclear Labs New Lease on Life as Stockpile Stewards

When President Clinton declared on 11 August that the US would end all nuclear tests, he raised doubts about the future of the nation's three nuclear weapons laboratories. After all, Energy Secretary Hazel R. O'Leary's handpicked advisory task force on alternative futures for her department's national labs—the panel headed by Robert W. Galvin, former chairman and CEO of Motorola—had proposed last February that nuclear weapons design and development should be shifted from Lawrence Livermore and consolidated at Los Alamos. Livermore possesses the greatest redundancy in DOE's entire laboratory system, the Galvin group noted, and it recommended that the lab concentrate on nuclear nonproliferation matters (see PHYSICS TODAY, March, page 75). But any doubts about Livermore ceased on 25 September when Clinton signed a decision directive that says "the continued vitality of all three DOE nuclear weapons laboratories is essential to the nation's ability to fulfill the requirements of stockpile stewardship as we enter into a Comprehensive Test Ban regime."

In announcing Clinton's decision, O'Leary reversed herself on the question of Livermore. When the Galvin report was released, she had said she was "favorably disposed" to the recommendation to phase out Livermore's weapons work over five years. But when she looked more closely at consolidating Livermore's weapons functions with those of Los Alamos, O'Leary said, she found that the savings would be minimal—just under

\$50 million per year—and "so it didn't make a lot of sense" to jeopardize the safety and reliability of the stockpile "by simply folding up a lab." Maintaining all three weapons labs in support of the science-based stockpile stewardship program, added O'Leary, "is the price we pay to forswear nuclear testing. That does not come cheap."

The stockpile stewardship program, which would be funded at some \$4 billion in fiscal 1996 if the President's budget request is approved by Congress, would include two new projects for Livermore: a major Accelerated Strategic Computing Initiative to simulate megaton-sized nuclear blasts as well as ensure stability and reliability of warheads in the stockpile, and the National Ignition Facility, a 192-beam laser that would trigger tiny nuclear explosions by inertial fusion (see PHYSICS TODAY, January, page 47, and August, page 22).

The Presidential directive also ends an 18-month interagency review of the labs and centers run by DOE, NASA and the Defense Department, which account for nearly 20% of Federal R&D spending. While not specifically addressing the seven other non-weapons DOE labs covered in the Galvin report and the interagency examination, Clinton said he had concluded that the DOE facilities as well as those operated by NASA and Defense called for "aggressive management reforms." Nevertheless, he stated, his Administration would not allow "severe budget cuts or senseless closures." Clinton's remarks seemed

aimed at some Republicans in Congress who contend that with the end of the cold war, the disintegration of the Soviet Union and the budget crunch, the laboratory system is now too bloated and expensive.

On Capitol Hill, Representative Roscoe Bartlett, a Maryland Republican who is a member of the House Science Committee and a former IBM engineer, complained that Clinton's announcement and the interagency review "totally ignored" the Galvin report. Bartlett, author of a bill that would establish an independent commission to restructure the DOE lab system, argued that O'Leary had asked for the agency to evaluate its own programs. House Science Committee Chairman Robert Walker, a Pennsylvania Republican, said he was "underwhelmed" by the decision. "It had to do more with politics than with science or defense." Galvin's reaction to Clinton's directive was more detached. "It's a judgment call," he said. The task force "called it one way and some other group called it another way."

Even so, Clinton accepted the main message of the Galvin panel, which recommended streamlining lab management practices by rescinding internal rules, regulations and oversight that impede lab performance. Clinton also directed DOE, NASA and Defense to clarify and sharpen the mission assignments of their labs, to eliminate duplicate functions, to coordinate facilities and to establish joint management techniques whenever these are deemed appropriate.

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