

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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