

# US defence labs face research cutbacks ...

## San Diego

National defence laboratories in the United States have had to tighten their belts to meet last-minute cuts in funding for long-term research projects chosen at the discretion of their directors. The cuts were quietly imposed by Congress in September as it raced to meet its budget deadline.

The Los Alamos National Laboratory in New Mexico, for example, has introduced a 90-day moratorium on hiring scientists while its officials consider how to reorganize their research in the light of the budget reductions. Some scientists can be hired during this period, however, but only if special recruitment needs arise.

Officials at the Sandia National Laboratories say they have imposed a special review process under which only the most critically needed scientists will be hired for its centres in Livermore, California, and Albuquerque, New Mexico. Sandia expects to receive about \$51 million this year for its discretionary research fund. Last year it received about \$79 million.

The federal budget for the fiscal year 2000, as approved by Congress, calls for discretionary research and development funds to be reduced from six to four per cent of each laboratory's budget. The directors of the laboratories can use these funds, distributed by peer review, to begin promising scientific projects, and the money is considered critical for underpinning weapons development and scientific programmes.

"In the long run, this is a major setback," says Klaus Lackner, acting associate director for strategic and supporting research at the Los Alamos laboratory. According to officials, the lab will receive about \$45 million for the research fund, compared with \$70 million last year. "We're eating the seed corn of our future," he says.

One Los Alamos staff member describes the cuts as "demoralizing" for researchers, claiming that some young researchers have begun looking elsewhere for positions because "they don't see a future" at the lab.

"Weapons are a high-technology business," says Charles Meyers, deputy director for operations and lab development at Sandia. "You have to keep an eye on emerging technologies. The sense of our scientific community is that, if you cut research and development, you are not going [to achieve the desired goals]."

Programme managers at the Lawrence Livermore National Laboratory in California say they are studying how to implement the cuts with the least damage. Top officials at the laboratory, who came under fire last week for mismanaging the construction of the National Ignition Facility (see right), declined to be interviewed.

But they said in a statement that they "are extremely concerned about the impact of this cut" that "will undermine the basic foundations of our current and future programme". Livermore's research fund is being pared to \$35 million from \$58 million, said a spokesman.

The non-weapons laboratories owned by the Department of Energy, such as the Lawrence Berkeley National Laboratory, also in California, spend less on research conducted at the discretion of their directors and will not be affected by the congressionally-imposed ceiling on it. But officials say a 30 per cent cut in travel expenditure imposed across the board by Congress on the Depart-

ment of Energy, labs, could have an impact on the ability of scientists to travel to conferences. "It's not a very constructive environment to do science," says Mike Chartock, head of planning and communication.

Some claim that Congress's cuts in research funds have been triggered by growing concern over management failures by the energy department. Others blame the cuts on political fighting between the Clinton administration and the Republican-controlled Congress at the beginning of an election year. A statement issued by the energy department argues that the reduction "will significantly impact long-term weapons programme milestones".

Rex Dalton

## ...as Livermore blasted for laser project delay

### San Diego

A review committee set up by the University of California has concluded that mismanagement and poor planning are to blame for significant cost overruns and delays in construction of the National Ignition Facility (NIF), the world's largest laser, at the Lawrence Livermore National Laboratory.

The ten-member committee, headed by Steve Koonin, provost of the California Institute of Technology, was set up by the University of California's President's Council to examine construction problems at NIF that were identified in August (see *Nature* 401, 101; 1999). In a 12-page report issued last week, it sharply criticized managers at the Livermore laboratory — which is run by the university on behalf of the US Department of Energy (DoE) — as well as the department itself.

"The project faces serious issues because the DoE and the laboratory violated some basic principles of sound project management," says the panel. "Neither the laboratory, the university nor the DOE had an effective and critical project review process in place."

NIF, the centrepiece of US efforts to ensure the continued viability of its nuclear weapons in the absence of a testing programme was initially to have cost \$1.2 billion and be completed



Mismanaged? NIF construction has been \$300 million over budget.

in 2003. But cost overruns of \$300 million are now expected, with completion delayed by at least 18 months.

The review committee endorsed the technical feasibility of the project, which has 192 lasers for use in nuclear, fusion and/or scientific experiments. But construction management was frequently deficient — project planning significantly underestimated contingencies, the committee said, and baseline goals were set too early.

The laboratory also had an ill-conceived "do-it-yourself mentality" that discouraged the use of outside expertise, the committee says, and "there were multiple failures at multiple levels that kept appropriate people ignorant of these concerns". The laboratory's director needs to "take ownership" of management of the project, it adds.

DoE secretary Bill Richardson

had told lab employees and the media gathered for the unveiling of the NIF target chamber last June that the project was on budget and on time. Even then, however, scientists at the laboratory and officials at the DoE knew there were serious problems. Officials now say they failed to brief Richardson adequately before his speech.

Bruce Tarter, Livermore's director, last week admitted past "weaknesses in the project's management structure", and said that significant steps — including replacing management, reorganizing teams and rededicating lab personnel — have already been taken to address the issues identified by the committee and internal reviews.

The DoE said in a statement that the review provided evidence that the university was committed to getting the NIF project back on track.

R. D.