

The fight to keep national research laboratories is key for U.S. future

by Mel Klenetsky

The March 1994 testimony of John H. Nuckolls, the recently resigned director of the Lawrence Livermore National Laboratory (LLNL), before the U.S. House Armed Services Committee, raised the issue of the future of the national laboratories in a most important fashion. This issue was also at the heart of Nuckolls's resignation, a resignation that was politically forced by those who are advocating a redirection and downsizing of these vital capabilities.

Nuckolls's testimony harshly criticized pending legislation (H.R. 1432 and the proposed amendment by Rep. Marilyn Lloyd (D-Tenn.) that would greatly weaken the complex of three labs—Lawrence Livermore, Los Alamos, and Sandia National Laboratories. According to Nuckolls, that legislation would accelerate the dismantling of the special capabilities which need to be strengthened to manage and control nuclear weapons in the 21st century.

Nuckolls raised the concern of the testing and stewardship of the nuclear weapons arsenal in the next 4-5 years and beyond, given the elimination of nuclear weapons testing, the aging of U.S. weapons systems, the dismantling of production capabilities with its concomitant computing and experimental facilities, and the disbanding of the scientific and technical teams that can deal with expected and unforeseen future difficulties.

"Speaking both as a citizen of the United States and as a director of a weapons laboratory where the needed technical expertise is being dismantled," Nuckolls said, "I must say . . . the federal government is in danger of failing to meet its constitutional responsibilities to 'provide for the common defense' and to 'secure the blessings of liberty to ourselves and our posterity.' "

The early-April resignation of Nuckolls as director of Livermore, less than two weeks after the testimony, was part of the orchestrated effort to take down the national laboratories. According to three regents of the University of California which manages Livermore, Nuckolls was pressured to resign by university president Jack W. Peltason.

The pressure to get rid of Nuckolls intensified in February when a panel of scientists was established to evaluate Nuckolls after several anti-nuclear groups, employees, and some business officials accused him of going too slow on conversion of the lab to civilian research. The panel questioned his management skills. According to regent Alice Gonzales, Peltason had sent out a letter also questioning Nuckolls's

management skills.

On the issue of poor management, many came to his defense. Former regent Jeremiah Hallisey noted that for years the regents considered Nuckolls to have excellent management skills. C. Bruce Tarter, the deputy director of Livermore, took a *Science* magazine article to task for claiming that Tarter and other key staffers gave negative testimony to the review committee on the Nuckolls case. Tarter wrote to *Science*, "In contrast with that statement, the thrust of my remarks to the review committee was in strong agreement with Nuckolls's strategic vision for the laboratory and was very supportive of the management structure that he had recently put in place. On the basis of informal conversations, I believe that a similar perspective was conveyed by the laboratory's associate directors."

Long-term challenges

Nuckolls argued that all three laboratories are needed at full strength to maintain the capabilities needed to meet the long-term and extraordinarily difficult challenges that could arise from adverse geopolitical and technological uncertainties, nuclear proliferation, and nuclear terrorism. He called for sustained funding for these efforts, and for the science-based stockpile stewardship program to be increased over the coming decade by \$300 million per year.

Strategic thinker and presidential candidate Lyndon LaRouche recently discussed the importance of the national laboratories and the efforts to dismantle them as a life and death issue for the United States. In an April 20 radio interview with "*EIR Talks*," LaRouche, in referring to the efforts of the environmentalist movement and others to get rid of Nuckolls, said, "These kinds of nut groups, which are determined, under the influence of people like the late Bertrand Russell, to destroy industrial society for what they deem a post-industrial, depopulated planet, see people who represent science or scientific research, like John Nuckolls, as the people to be eliminated.

"We have eliminated, over the past 30 years, especially the past 20, entire categories of scientific capability we once had. The reason we don't have jobs in the United States, the reason the jobs have fled to Japan or to other parts of the world, is that we have done the kind of thing which is typified by the firing of Nuckolls.

"They want to get rid of John Nuckolls, not because he's

military. . . . What they're really up to, is concentrating on the fact that most of our science and technology was concentrated in the military-related or defense-related scientific and R&D sector. And John Nuckolls typifies that. . . . We are looking at the economic suicide of the United States."

The Nuckolls testimony

The following are excerpts from Nuckolls's March 22 testimony to the House Armed Services Committee:

We are concerned about pending legislations that could greatly weaken the three lab complex, and accelerate the dismantlement of the special capabilities which need to be strengthened to manage and control nuclear weapons in the 21st century.

In the energy area, we are developing technologies to reduce U.S. reliance on imported and nonrenewable energy sources. One major activity is our work on inertial confinement fusion. ICF is essential to our stockpile stewardship program and may also provide the key to energy security for the United States.

Why a stockpile stewardship program? The DOE [Department of Energy] national weapons laboratories are responsible for stockpile stewardship—that is, for assuring that the nuclear weapons in the U.S. stockpile remain safe, secure, and reliable. This broad-based challenge demands the combined efforts of weapons designers and engineers, theoretical and experimental physicists, chemists and materials scientists. It requires the management of multidisciplinary project teams and draws on the core competencies of the laboratory. . . .

[It] requires world-class computing and experimental facilities so that nuclear weapons scientists will be able to validate technical judgments in the absence of nuclear testing.

The foundation of this . . . program must be established now, before the physicists and engineers who have hands-on experience in designing, fabricating, and testing nuclear devices retire or seek employment elsewhere. Much of LLNL's original cadre of weapons scientists has already retired, and essentially all of the experienced people will retire within a decade.

This stewardship program must be strongly hedged. In spite of our best efforts, future scientists may not be totally successful in recognizing problems in the stockpile. And there may be cases where recognized problems cannot be fixed.

Politically, a reborn imperialist Russia could place special demands on the stockpile. We must keep extra measures of flexibility and redundancy in the stockpile, with multiple war-head types to protect against problems in any one type. . . .

LLNL's core competencies include: nuclear science and technology, high-performance computing, high-performance lasers, sensors, and instrumentation, plasma physics and technology, accelerator physics and technology, energy

science and technology, biology and biotechnology, environmental science and technology, atmospheric science and earth science, small-satellite technology, materials fabrication and processing, and large-scale science systems development and engineering.

Other LLNL technologies, many of them spin-offs from the weapons program, are being tapped by U.S. business and industry to improve . . . economic competitiveness.

We are working with an industrial partner to improve the accuracy of high-productivity machine tools. . . .

We are working with two partners to develop advanced computer codes, taking advantage of parallel processing, to help the pharmaceutical industry improve the design of new anti-cancer drugs.

We are working with the aerospace industry to develop moderate-cost, high-performance, laminated metal composites suitable for aerospace use. . . .

We are working with the health-care industry to develop a highly accurate mammography device that will produce clearer images using less radiation, thus enabling earlier and more accurate detection of breast cancer. . . .

These activities, and many others, bring positive benefits to the laboratory and bolster the technology base efforts within the weapons program. . . .

To support the science-based stockpile stewardship program, DOE/DP must increase the sustained funding devoted to these efforts over the coming decade by about \$300 million a year.

A critical issue facing LLNL's nuclear weapons program is the need for a stabilized budget. Since 1987, our nuclear weapons effort has declined by more than a factor of two; in 1995, it will fall another 27% if the President's budget request is approved. . . .

To meet current and projected budgets, we are now being forced to eliminate scientific capability . . . [which] provides a hedge against future uncertainties, both political and technical. Scientific capability is needed to tackle the challenges of the science-based stewardship program and new nuclear dangers. . . .

The amendment to H.R. 1432 proposed by Representative Lloyd calls for the development of a plan . . . for redirecting one or more of the departmental nuclear weapons laboratories to civilian missions [Sec. 5 [4]].

I strongly disagree with the provision to redirect one or more of the weapons laboratories. The best efforts of all three laboratories are needed to meet urgent and critically important national security needs, including the creation of hedges against adverse geopolitical and technological uncertainties: runaway nuclear proliferation, nuclear terrorism, and the creation of a new Russian empire and nuclear superpower. It is by no means clear that the combined efforts of all three laboratories will be sufficient. Substantially increased funding is needed to address the technical issues and a new generation of the best and brightest scientists and engineers should be recruited. . . .