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Visual hearing

NUCLEAR PHYSICS

Belgrade Lab Sets New Course After Top-Secret Uranium Grab

CAMBRIDGE, U.K.—Last week's cloak-and-dagger operation to remove weapons-grade uranium from a physics institute in Yugoslavia has allowed nuclear nonproliferation experts to breathe a little easier. But it has complicated life for the Vinča Institute of Nuclear Sciences in Belgrade, which is scrambling to find work for its scientists and to lend a hand in the country's revitalization. The surprise raid pulled the rug out from under an international research collaboration aimed at easing the country's reliance on coal. In a separate development, however, the institute also got a boost this week: final approval of a multimillion-dollar project to produce medical isotopes for the country's health care system.

Vinča was once a bastion of topflight nuclear research (*Science*, 27 October 2000, p. 690). Although its research reactor has been dormant since 1984, Vinča has maintained a cache of 5000 fuel rods of highly enriched uranium (HEU). That fuel, according to the U.S. State Department, would have provided enough material to make two nuclear bombs. So on 22 August, U.S. and Russian experts, with Belgrade's help, entered the plant, scooped up the 48 kilograms of unused fuel, and flew the material to a processing plant in Russia, where it will be blended down for use in civilian power plants. The operation eliminated what State Department spokesperson Philip Reeker labeled "one of the U.S. government's highest priority nuclear proliferation threats."

U.S. fears about the uranium's fate had crested during NATO's bombing of Yugoslav troops in Kosovo in spring 1999, when Slobodan Milosevic was still in power. "I thought, 'My gosh, we don't know what Milosevic might do with the highly enriched uranium,' " says Matthew Bunn of Harvard University's Belfer Center for Science and International Affairs, who at the time was leading a secret study for the Clinton Administration on the security of Russia's nuclear materials. Bunn and others feared that Milosevic might sell the material to a country like Iraq. After the 11 September attacks, concern shifted to a terrorist raid on the lightly guarded storage area.

The precision strike—kept secret from everyone at Vinča except its director—went off smoothly but claimed a civilian nuclear power project as an unintended casualty. Vinča researchers had hoped to use 10 kilograms of the HEU for a tabletop "subcritical assembly" experiment in which the uranium would be irradiated with protons from the institute's cyclotron. The solid state physics experiment would have simulated conditions in a light water nuclear reactor.

Sealing things up. Inspectors check seals on HEU fuel containers before they are flown out of Belgrade.

Yugoslavia does not have nuclear power, but experts have been pondering its development in view of the uncertain future of Kosovo and its tremendous coal reserves, says Vinča's Nebojsa Neskovic. His group was going to tap expertise from a team at Brookhaven National Laboratory in Upton, New York. "I don't know what they're planning to do now," says Brookhaven team leader Hiroshi Takahashi. In principle, Takahashi says, the experiments could run on low-enriched uranium—fuel containing less than 20% uranium-235. (Vinča's erstwhile HEU is 80% uranium-235.) But Vinča doesn't have any of this nonweapons-grade fuel. "I would hope that the U.S. can help with this," says Bunn.

Although the reactor-simulation experiments have been sidetracked, the prospects are looking brighter for many Vinča scientists. The Italian government has agreed to give roughly $2 million to upgrade Vinča's TESLA cyclotron facility so it can produce fluorine-18. The radioisotope, with a half-life of 110 minutes, will be used for positron emission tomography (PET) scanning in local medical clinics. If the Serbian government comes through with promised matching funds, Vinča should be producing fluorine-18 by early 2005. "The idea is to have something concrete for the community as soon as possible," says Neskovic, director of the TESLA Scientific Center, who notes that the government is planning to purchase the country's first PET-scanning machines by the time the isotopes are available.

Vinča also hopes to launch a basic research program on nuclear science and biomedicine. Its request for $2.65 million for further TESLA upgrades will be discussed in December at a UNESCO-sponsored meeting in Paris. And next month it expects to ink an R&D agreement with Ion Beam Applications, a particle accelerator company in Louvain-la-Neuve, Belgium, for work on next-generation medical radioisotopes such as terbium-149 for treating leukemia.

"TESLA will be an impressive research facility," Bunn predicts. The HEU commandos might even have helped, he notes, by removing the long shadow over its research program. **–RICHARD STONE**

ENVIRONMENTAL HEALTH

Critics See a Tilt in a CDC Science Panel

The shakeup of a key science panel at the Centers for Disease Control and Prevention (CDC) in Atlanta has angered environmental health advocates. Critics say that the Bush Administration is tilting the CDC advisory group toward industry, but a spokesperson for the parent agency, the Department of Health and Human Services (HHS), says the housecleaning is routine.

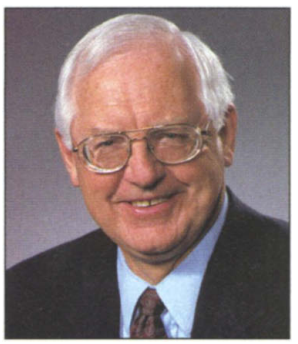
What's not in dispute is the change in the makeup of the advisory committee to the director of CDC's National Center for Envi-

CREDIT: U.S. DEPARTMENT OF ENERGY

ronmental Health (NCEH). Earlier this month, the government put 11 new members on a 16-member committee, according to a roster obtained by *Science*, apparently without consulting NCEH Director Richard Jackson. Jackson could not be reached for comment, but an HHS official confirms that HHS Secretary Tommy Thompson's staff has assembled a new roster of advisers.

"The last time anything like this [overhaul] happened was under [former President Ronald] Reagan," says departing committee member Ellen Silbergeld, a toxicologist at the Johns Hopkins University Bloomberg School of Public Health in Baltimore, Maryland. Silbergeld, who has worked with environmental groups, maintains that the new lineup is weighted with people who take a jaundiced view of environmental regulations and that similar Reagan-era changes at the Environmental Protection Agency were "demoralizing to the people being advised."

But HHS spokesperson William Pierce says it's disingenuous to criticize the Bush Administration for installing like-thinking individuals "when every Administration does that. ... That's like saying, 'Gosh, there's gambling going on in this casino.'"



CREDITS: (LEFT TO RIGHT) R. A. FLYNN; JHU BLOOMBERG SCHOOL OF PUBLIC HEALTH

NCEH coordinates responses to public-health dangers from anthrax to hurricanes. In doing so, it investigates everything from microbes to radiation. The old committee, according to its chair, Thomas Burke of the Hopkins School of Public Health, was "very activist in support of" NCEH. During his 5-year watch, NCEH launched a major expansion of the Environmental Public Health Tracking program, which tests for human exposure to synthetic chemicals. Its first report, issued in March, detailed widespread low-level exposure to organophosphate insecticides and chemicals called phthalates, used in fragrances and cosmetics. According to Silbergeld, the tracking program offers "a revolutionary opportunity to make health policy based on data." But the report also rankled some pesticide and chemical manufacturers.

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>
> —Roger McClellan

The new NCEH advisers include a number of prominent industry consultants and critics of federal regulation. Among them are toxicologist Roger McClellan, an Albuquerque, New Mexico–based consultant and former director of the Chemical Industry Institute of Toxicology; Becky Norton Dunlop, a vice president of the conservative Heritage Foundation who battled federal environmental regulators as a Virginia official; and Lois Swirsky Gold, an expert on risk assessments who has minimized reports linking environmental pollutants and cancer. The new panel is expected to hold its first meeting in November.

Advocates of strong federal regulations seem most upset by the inclusion of Dennis Paustenbach, a California-based toxicologist whose firm conducts paid risk assessments for industry. Paustenbach, for example, was an expert witness for California utility Pacific Gas and Electric in a trial involving allegations that the company had poisoned drinking water with a deadly form of chromium—the theme of the movie *Erin Brockovich*. But Paustenbach rejects the critics' claim that he echoes industry views. Pierce says that the names of McClellan and Paustenbach were put forward by John Graham of the Office of Management and Budget, who is himself a target of environmentalists (*Science*, 14 December 2001, p. 2277).

Barry Bloom, dean of Harvard School of Public Health in Boston, says that it's essential to involve industry in environmental research that affects them. "But everyone should have scientific credentials," says Bloom, who serves on another CDC advisory committee. Pierce says that the new appointees are qualified and "committed to the mission of the center." McClellan, a member of the Institute of Medicine, says, "I'm offended if anybody thinks I represent any constituency other than the best possible science."

NCEH's Jackson appears not to have played a role in the selection process. Silbergeld says Jackson called her on 9 August to say that "a whole new board ... has been selected for me." She recalled: "We both noted how unusual that was." Pierce, however, says that Thompson's staff gave the committee no special scrutiny.

> **"The last time anything like this happened was under Reagan."**
>
> —Ellen Silbergeld

Critics are worried that the new advisory committee will push NCEH toward policies that favor industry, but Pierce and others point out that the center's director is free to ignore the committee's advice. More important, says Burke, is to avoid having the committee and NCEH work at cross purposes: "A supportive committee is essential" to public health.

–DAN FERBER

COSMOLOGY

NSF Funds South Pole Microwave Telescope

Cosmologists will soon look at the sky in a new way. The U.S. National Science Foundation (NSF) has agreed to fund a $17 million microwave telescope at the South Pole that offers a novel approach to mapping the distribution of matter in the universe.

On 15 August, the National Science Board, NSF's governing body, approved a proposal to build the as-yet-unnamed telescope to survey the heavens. "It will be a real revolution in cosmology," says Antony Stark of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, one of the co-investigators of the telescope project.

The telescope will make use of the