

Lord's work in a lot of these areas," says Bill Morin, who handles technology policy for the National Association of Manufacturers. "Like everything else, federal R&D is going to have to shrink to pay for other changes. But we'd like to see those cuts made on their merits, not on ideological grounds."

The TRP cuts, if allowed to stand, would allow completion of the first round of projects funded in 1993, typically for 18 to 24 months. But the cuts would halt a competition scheduled to be announced next week, as there would be no funds for new projects. The second year of projects funded last fall is also in jeopardy. "We would have to reassess whether it makes sense to continue with them," says Lee Buchanan, who directs the program. Buchanan took issue with the committee's comments that the "Defense Department has yet to identify any military

benefits from the program," saying that TRP "was created as a long-term program and that, as R&D, it will be years before any of this shows up on the battlefield."

The ATP cuts, for their part, would "have a disastrous effect" on a new round of competitions focused on 11 fields that NIST has selected, according to agency officials; projects in unspecified areas and those that have already been funded would still proceed. The committee report said that ATP has been allowed to grow too quickly without an assessment of whether it can meet its goal to foster new technologies, but NIST officials defend its value as the only federal program designed to bridge the gap between basic research and short-term product development.

Supporters hope that the Senate, with help from members who created the programs—in particular Senators Jeff Bingaman

(D-NM) and Ernest Hollings (D-SC)—will be able to shift the debate away from cutting budgets to a look at the merits of the research being funded. "These programs offer the government the cheapest and fastest way to get this technology," says chemist Steve Borleske of Dupont, which is involved in several projects that require matching funds from industry. He and other supporters say the programs will save the government money by giving industry the ability to switch more quickly from civilian to military production as needed. The industry coalition hopes to give research project directors a chance to "present their story," says Taffy Kindscott, director of science and technology policy for IBM, which has 17 TRP projects. "But we don't have much time," she adds. "This thing is moving pretty fast."

—Jeffrey Mervis

CANCER THERAPY

Brookhaven Prepares for Boron Trials

Researchers at Brookhaven National Laboratory are on the verge of receiving government approval to treat 28 people dying of brain cancer with an improved version of a therapy that was abandoned three decades ago after several patients died from the treatment. The Food and Drug Administration (FDA) is expected to give final approval, perhaps as early as this week, to the trial, which involves boron neutron capture therapy (*Science*, 23 September 1994, p. 1799).

That's welcome news for terminally ill patients who have run out of conventional treatment options, but it will generate a problem for Brookhaven, which is bracing for a flood of requests from dying patients. Brookhaven plans to use a lottery to choose from among those who meet stringent initial requirements for treatment, but researchers worry that politicians—who already have played a role in speeding the revival of the therapy—may try to influence the selection process.

So far, two people have undergone the updated treatment, in which patients are given a boron compound and then exposed to a stream of neutrons generated by a nuclear reactor. The compound, which is designed to concentrate in the tumor, captures neutrons and becomes radioactive, delivering a dose of radiation to the surrounding tumor. Joann Magnus, who underwent the therapy in September after appealing successfully to Department of Energy (DOE) Secretary Hazel O'Leary, has benefited from the therapy, according to her neurosurgeon, Richard Bergland of Beth Israel Hospital in New York and a collaborator in the experimental treatment. "The tumor has been controlled," he says. "Basically it's still the same size." A second woman was treated on 2 Feb-

ruary after the FDA granted conditional approval for the trials, and her condition is stable, Bergland said. Brookhaven officials say it is far too early to draw any conclusions about the impact of the therapy.

Now that Brookhaven can treat more patients, "the real story is going to be in the rationing over the next year," says Bergland. "Everyone who has a friend in government is



High-powered meeting. Energy Secretary O'Leary and cancer patient Joann Magnus, who was treated at Brookhaven National Lab last September.

going to be banging on Brookhaven's door. It's going to be a tremendous problem." He says that one woman with connections to Senator Alfonse D'Amato (R-NY) hopes to win admittance by following in Magnus' footsteps. Darrel Joel, chair of the Brookhaven medical department, says "we will resist at all costs" pressure from politicians to override the lottery plan. But he admits that holding the line could prove difficult.

The Brookhaven team expects to begin treating two patients a month, starting in

March, after the FDA has granted final approval and a treatment plan is in place. The trials will run for 8 or 9 months, Joel says. Bergland criticizes the timetable, noting that patients like Magnus with a cancer called glioblastoma normally die within 6 months. "It's ridiculous," he says. "The right way to do it is 28 [patients] in one month."

Brookhaven has good reason to be cautious. Tests of the therapy conducted between 1951 and 1960 went awry when the radiation failed to control the tumors and killed a handful of the 70 patients. The new therapy is based on a different boron compound that concentrates better in tumors and has a good track record in animal experiments. Despite these improvements, Joel says what happened in the 1950s should not be forgotten. "The history is not a pleasant one, and we can't afford to make the same mistake twice," he says.

Outside observers remain skeptical of the trials, questioning both the efficacy of the therapy and the role being played by politicians. "[Brookhaven] has been bullied into this much too quickly," says William Happer, a Princeton physicist and former head of DOE's Office of Energy Research. "But I don't blame Brookhaven—they didn't have much choice. I just hope this time they have better controls."

Brookhaven officials say they could treat several patients a day if the trials prove successful. And because conventional radiation therapy in a typical U.S. hospital costs \$20,000 to \$30,000, Bergland says the procedure "could be a tremendous cash cow" for the laboratory. But Joel isn't looking that far ahead. "First we need to establish that this is a viable therapy," he says.

—Andrew Lawler