

expected to embrace budget levels set by the House interior committee on 1 May. The committee's actions, aides say, track Asselstine's objections to the NRC budget.

The interior committee has recommended funding reactor regulation programs at \$96.7 million, compared to the \$88.9 advocated by NRC. The House committee also wants inspection and enforcement efforts funded at \$95.5 million, almost \$3 million more than called for by NRC. The nuclear materials safety and safeguards budget would be boosted to \$42.5 million, almost \$2 million more than NRC sought.

The Senate environment committee's action parallels the House interior committee with two exceptions. It authorizes increasing reactor regulation funds to \$91 million—slightly less than the current budget. And, it calls for funding regulatory research programs at \$136.6 million—\$600,000 more than the NRC requested but less than this year's \$150-million budget.

The environment committee recommended a total of \$437 million for NRC in 1986—\$8 million more than requested by the agency. The House and Senate appropriation committees are expected to rely heavily on the authorizing committees' recommendations, staffers say. They are not expected to take up the NRC budget until later this month or early June.

—MARK CRAWFORD

Ohio State, Arizona to Build Giant Telescope

Ohio State University and the University of Arizona have announced that they will jointly build an 8-meter infrared telescope atop Arizona's Mount Graham, some 100 kilometers northeast of Tucson.

When completed in the early 1990's, the Mount Graham instrument will be second in size only to the recently announced W. M. Keck telescope, a 10-meter instrument that will be built on the summit of Hawaii's Mauna Kea by the University of California and the California Institute of Technology (*Science*, 18 January, p. 275).

As in the California project, the Ari-

zona/Ohio State group will use so-called "new technology" to transcend the size limits on conventional mirrors, represented by the 5-meter Hale telescope on Palomar Mountain and the 6-meter Soviet telescope at Zelenchukskaya in the Caucasus. However, the approaches are very different. The California mirror will be a mosaic of 36 hexagonal segments kept in a constant adjustment by computer, whereas the Arizona/Ohio State mirror will be cast as a single monolith.

The technique was developed by Arizona's Roger Angel, with major concerns being simplicity and cost-effectiveness. First, chunks of Pyrex glass are melted in a mold; then, as the glass cools, the mold is spun so that centrifugal force creates just the right parabolic surface on the finished mirror blank. This means that very little glass has to be removed during the final polishing. Angel and his colleagues have successfully demonstrated this technique on a 1.8-meter mirror, and are now building a facility for 8-meter mirrors under the university football stadium, Manhattan Project style.

In addition, the mirror for the new telescope will be given a relatively large curvature and a correspondingly short focal length, which means that the telescope structure and its protective dome can be that much smaller and cheaper. The upshot is that the estimated cost of the 8-meter instrument is only \$25 million, far less than the \$85 million being budgeted by the Californians. (Also under consideration is a plan to include a second, identical telescope, which would raise the cost to some \$50 million.)

The money is not yet in hand, but the partners do have reason to be optimistic. Ohio State is in the midst of a \$250-million fund-raising drive, and Arizona, which is currently celebrating its centennial, is raising \$100 million. Eugene R. Capriotti, for one, believes that the astronomers can make a case for a small fraction of that money.

As chairman of Ohio State's astronomy department, he is the first to admit that "Arizona is the dog and we're the tail at this time. But the whole idea is to develop a program here of the first magnitude." Indeed, the observatory will have a remote control and viewing site on the Ohio State campus in Columbus. "We hope to sit here in Ohio and operate the

telescope out in Arizona," he says. "We don't have to sit back any longer and let places like Texas and California dominate astronomy because of location."—M. MITCHELL WALDROP

Senators Criticize Lopsided Chemical Weapons Panel

Last October, the House and Senate Armed Services committees asked the White House to establish a "bipartisan" commission on binary chemical weapons. The group's assignment was to assess the usefulness of existing chemical weapons, the adequacy of proposed defensive measures, and the implications of binary production for arms control. Supporters of the program hoped that the commission would generate a favorable consensus similar to that created by the Scowcroft panel on the MX missile.

In response, the White House appointed at least six people to the eight-member panel who had previously supported the production of binaries. Thomas Welch, a deputy assistant secretary of defense for chemical matters, was appointed as its executive secretary, and staff work was performed by members of the Army's chemical corps. In a report on 1 May that surprised no one, the panel concluded that binary weapons should indeed be produced.

At a hearing of the Senate Armed Services Committee, panel chairman Walter J. Stoessel, Jr., a former U.S. ambassador to Germany, Poland, and the Soviet Union, stressed that the members had all "come to this with an open mind." But he acknowledged under questioning from several senators that none of the members had previously opposed binary production.

The panel, which included several retired Army officers, as well as former national security adviser Zbigniew Brzezinski and former secretary of state Alexander Haig, concluded that only 25 percent of the existing chemical stockpile is "serviceable," and only a fraction of that is "militarily effective." All of these weapons "should be destroyed at an accelerated rate," Stoessel said, provided that binary weapons are created to take their place.