

The Presidential budget for fusion for fiscal year 1973-74 was \$44.5 million, \$7.5 million higher than the previous budget. The Joint Committee has authorized an additional \$8.5 million above the request, and this level was subsequently accepted in the AEC appropriations bill. The question is now whether the President will apportion this amount.

As Hirsch read the position paper to the Committee, he was interrupted by Craig Hosmer (R., Calif.), who asked, "Is your quotation deliberately, inadvertently or inescapably vague?" After Hirsch explained that they have not yet done their homework about detailed plans, Hosmer concluded, "Then I'd say you were inescapably vague." Hirsch then remarked, "I feel in an inescapable position."

Priorities. The position paper states that tokamaks presently do and will continue to receive primary emphasis in the US CTR program. In fact, these low-beta toroidal experiments receive about 60% of the money. The remaining 40% is split about equally between theta-pinch and magnetic-mirror experiments.

Future directions for low-beta toroidal research, the paper said, will include: demonstration of confinement at reactor-like conditions, the exploration of alternative toroidal configurations, other than tokamaks, and the testing of engineering features, such as divertors and fueling systems. The design of D-T burning systems will also proceed.

Hirsch told us that over the next two to four years, critical experiments will be done to determine whether or not to go ahead with D-T burning experiments in the magnetic-mirror and theta-pinch experiments. These are done primarily at Livermore and Los Alamos, respectively.

Tokamak experiments are underway at several laboratories. Hirsch particularly singled out the recent successes at the Adiabatic Toroidal Compressor at Princeton, the Ormak machine at Oak Ridge and the Doublet II at Gulf General Atomic. Recently, with the Princeton device, experimenters were able to do a low-power test of neutral beam heating, which resulted in an increase in ion energy of 20-25%, as predicted by theory. Furthermore, no harmful plasma instabilities were observed.

Besides these major advances, one can point to a lot of smaller-scale successes that suggest that understanding has advanced considerably, Hirsch said.

The Committee members questioned Hirsch closely about the progress of two other tokamak experiments, Alcator at MIT and the Texas Tokamak at the University of Texas. Hirsch admitted that the objectives of these two experiments have not been obtained yet, partially due to the difficulty of big-

machine operation in a university environment. "We have established goals and milestones for them in the coming year," he said. "Those goals and milestones are go, no-go."

In addition to the priorities that have been established in the Division's Confinement-Systems Program, Hirsch told us that he would like to see a far greater expansion of materials studies (conducted in the Technology Program) and of computer simulation of plasmas (conducted in the Research Program). Hirsch now believes that a realistic three-dimensional computer simulation of plasmas could be developed in the next three to five years.

After Hirsch discussed the organization of his Division, Hosmer asked, "Do you have a safety officer?" The answer was, "Yes." Hosmer went on, "Do you have an environmentalist?" Hirsch said, "To a degree, many of us in fusion are environmentalists of one type or another." Finally, Hosmer queried, "Have you got an antitrust man?"

Besides Hirsch, the Committee heard from AEC Commissioner Clarence Larson and representatives of the four major fusion laboratories. In his closing remarks, Chairman Price said that the Committee would fully support an acceleration in the program and wished AEC luck in the process. Hearings on laser pellet fusion are expected to take place soon.

—GBL

Technology study to use US Patent Office data

A vast source of technological information will be tapped as the newly established Office of Technological Assessment and Forecast makes information more available from the US Patent Office files. Monitoring changes in the 11 million documents in more than 85 000 categories will show "changing patterns of patent activity and should produce an accurate indication of technological activity throughout the world," said Betsy Ancker-Johnson, Assistant Secretary of Commerce for Science and Technology.

The analysis of overseas technological activity is possible due to the rising number of foreigners who take US patents—from 17% of the patents in 1961 to 31% in 1972. Policy makers will make use of data indicating which areas of endeavor show unusually rapid growth and in which areas foreigners are participating heavily.

The first publication from the office, *Technology Assessment and Forecast*, lists patent data by category and country of origin, along with sample reports drawn from specific technological fields. Economic data dealing with research and development expenses and

import-export information might be included in future studies.

Fusfeld to be Industrial Research Institute head

Herbert I. Fusfeld has been named president of the Industrial Research Institute, succeeding Walter L. Abel. Fusfeld is Director of Research for Kennecott Copper Corporation.

The IRI comprises 230 companies, mostly in the US, and serves, according to Fusfeld, "an increasingly important role in developing an effective interface between research in industry and those charged with research responsibilities in the governmental and academic sectors." Other IRI goals include encouraging interaction between research and other corporate functions and maintaining high standards in industrial research.

Other new officers named include N. Bruce Hannay, senior vice-president (who is vice-president for research, Bell Laboratories), and Arthur M. Bueche, vice-president (vice-president for research and development, General Electric Company).

in brief

The NSF report *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, Fiscal Year 1971*, can be obtained from the US Government Printing Office, Washington, D. C. 20402 for \$2.10.

The Polytechnic Institute of Brooklyn became the Polytechnic Institute of New York on 1 September, reflecting PIB's merger with New York University's School of Engineering and Science. The merger, authorized by the New York State Legislature, creates an institute based in Brooklyn, the Bronx, Manhattan and Farmingdale, N.Y.

A Committee of Scientific Society Presidents has been formed to help create a national science policy. The presidents, representing 13 societies and 200 000 members, will serve on the committee to study problems and issue public statements that express the consensus. American Chemical Society President Alan C. Nixon is the first committee chairman.

Science Council of Canada Report 26, *Government and Innovation*, is available from Information Canada, Ottawa, for \$3.75 per copy.

A National Academy of Sciences report, *Physics in Perspective, Vol. II, Part B: The Interfaces*, can be obtained from the National Academy of Sciences, 2101 Constitution Ave., Washington, D.C. 20418, for \$13.50.