

PHYSICS IN GOVERNMENT

Atomic Energy Commission physical research budget rises \$23 million

AEC support of high-energy research will take the largest slice out of an approximate 10% increase in AEC's \$258.9 million physical-research budget for fiscal 1967. A more modest rise in the commission's medium-energy program will go largely for the proposed Los Alamos meson-physics facility. Other increases will support new research tools and more intensive operation of older facilities in the low-energy range, as well as chemistry and metallurgy studies. AEC did not raise by any appreciable amount its support of controlled thermonuclear research. Significantly, the Controlled Thermonuclear Research Review Panel, in its recent report to the Joint Congressional Committee and AEC, warned that the fusion program would "deteriorate rapidly to a secondary role if the present static budget of the AEC is continued" (see

PHYSICS TODAY, March 1966, page 60). Approximately 75% of the physical research program (see table below) is conducted at ten sites owned or operated for the commission.

AEC plant and capital-equipment costs for accelerators, in millions of dollars, include the following:

Argonne National Laboratory	
Low-energy accelerator	0.4
Zero-gradient synchrotron	2.0
Brookhaven National Laboratory	
Alternating grad. synchrotron	45.8
Accelerators and reactors	0.8
Lawrence Radiation Laboratory	1.6
Cambridge and Princeton machines	1.9
Stanford linear accelerator	0.4
Los Alamos meson facility	3.0

All are for machine improvements, modifications and conversions except the funds for design work on the Los Alamos meson-physics facility, which rose from \$1.2 to \$4.2 million.

AEC Physical Research Budgets, 1965-1967 (\$ millions)

Program	1965 (actual)	1966 (est.)	1967 (est.)
High-energy physics	87.1	97.9	109.8
Medium-energy physics	5.6	9.3	11.0
Low-energy physics	24.5	26.8	28.8
Math and computer research	5.2	5.9	6.4
Chemistry research	46.2	49.9	53.5
Metallurgical research	22.6	24.8	26.8
Controlled thermonuclear research	21.3	21.5	22.6

National Science Foundation budget request for 1967 up 9.4%

Big increases to support more basic-research personnel, more university computers, expanded national research centers and new and broader education programs have pushed the National Science Foundation's budget up to \$525 million for fiscal 1967. At the same time, significant cuts were recorded in the foundation's graduate facilities and undergraduate instructional equipment programs.

A major budget increase from \$160

million to \$185 million has been asked to provide 4015 basic-research grants for scientists and graduate students. NSF will raise Project Mohole funds from \$17.9 million to \$19.7 million and university computing facilities from \$9 million to \$12 million. In boosting national research center support from \$22.5 million to \$28.9 million, the foundation has allocated \$7 million for construction of the Kitt Peak 150-inch stellar telescope

and another \$10 million for the National Center for Atmospheric Research.

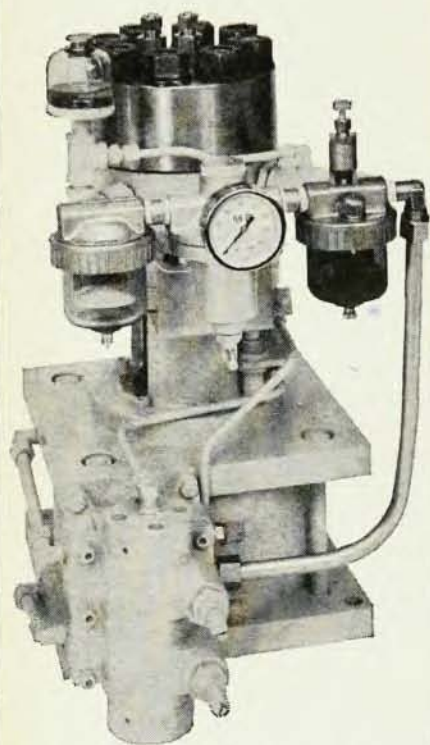
NSF is also expanding its fellow and trainee program to support 8798 students during 1967 and will raise the number of curricula-improvement grants from 68 to 80. Support for the institutional grant program (with grants in the \$30,000 range) will remain at the same \$14.5 million level as last year. It will, however, operate from a broader base which will benefit schools that have not previously received such support. In its science development program NSF will award 30 to 60 of these highly coveted grants, which range from \$100 000 to \$5 million.

Help for COPFIC schools? In 1967 the foundation hopes to inaugurate two new mechanisms of support for the smaller and weaker institutions of the country. The first program, College Science Improvement, will provide \$10 million in grants ranging from \$125 000 to \$225 000 to strengthen science primarily in 600 institutions that do not grant PhD's. "These institutions," says NSF, are confronted with the complex problem of maintaining quality science education in the face of extreme competition for qualified faculty and a major increase in the requirements of modern curricula equipment and facilities."

The other new program will use \$10 million for improvements in a single scientific department or specific science area within a school. Grants under the project, which is an adjunct of the Science Development Program, will range up to \$200 000 a year for two- or three-year periods.

"Both of these new programs," says William W. Watson of the Committee on Physics Faculties in Colleges, "and especially College Science Improvement, will probably help COPFIC schools in many respects." To what extent the programs will actually aid the 600 non-PhD-granting schools cannot be precisely known until NSF releases full program de-

new catalog of superpressure equipment



**pressures to 100,000 psi
temperatures to 1000°F**

At your fingertips, over 100 pages of updated detailed information on Aminco's standard line of Superpressure Equipment.

Described is an expanded line of Pumps and Compressors now including hand-operated, motor-driven and air-operated units with pressures up to 100,000 psi. Another section fully describes everything needed to order Valves and Fittings. Also covered are Pressure Balances, Reaction Vessels, Custom-Built High-Pressure Equipment, and many accessories.

WRITE FOR YOUR FREE COPY OF CATALOG 466, PT 4

Shown above is the 46-14060 Air-Operated Single-End 30,000 psi Compressor, one of many compressors described in this new catalog.



**AMERICAN
INSTRUMENT
CO., INC.**

8030 Georgia Ave., Silver Spring, Maryland

tails in a month or two.

One conspicuous cut in the 1967 NSF budget is directed at support for graduate science facilities. This support will decrease from \$31.6 million to \$20 million and from 90 to 60 grants. Another significant decline will be in grants for instructional equipment for undergraduate education. The amount budgeted for such grants slipped from \$7.5 million (904 grants) to \$4 million (485 grants).

Congress continues science probes

As the second session of the 89th Congress neared its Easter recess, subcommittees headed by Sen. Fred R. Harris (D-Okla.) and Rep. Henry S. Reuss (D-Wis.) intensified their probes into government-supported scientific research in this country and abroad.

The Senate recently approved a \$66,000 budget for the Harris subcommittee on government research,



HARRIS

and the senator has proposed the following questions that his group will ask the government science establishment: Are the expenditures for research and development necessary and justified? Are improved administrative procedures needed to guard against overlapping among federal agencies? How can we establish national policies for the support of various fields of research? How can we provide for better dissemination of research results? How can we be certain of fairness in distributing government research contracts?

Some flavor of the congressional mood can be gathered from what Sen. Harris told PHYSICS TODAY. "If America decided to make national policy for science by accident," he said, "then we would just continue to go on as we are doing. Our policy is

scattered over many agencies and departments. The President's Science Advisory Committee, the Office of Science and Technology, and the Federal Council for Science and Technology are all very inadequate. Congress simply has not exercised its policy-making role in this area, and we are unhappy with the present decision-making setup. It is Congress that should be making all our policy in the research and technology field."

Meanwhile in the House of Representatives, the Reuss subcommittee on research and technical programs was questioning representatives of five agencies "principally responsible for the dollar drain caused by support of foreign scientists." Alluding to foreign research projects supported by the US, Reuss asked, "Couldn't Britain pay to study the role of the English family doctor? Couldn't we wait for a few months until the gold crisis is over to do the study of East African monkeys? I love science and I love the world, but I think prudence is in order until our balance of payments is under control."

In his testimony before the Reuss subcommittee, Donald Hornig, the President's science advisor, provided a balanced review of our support of foreign research. Said Hornig, "There is research of interest to this country that can be carried on only outside the United States. This country is not self-sufficient in science. Special competence not found in the US is found elsewhere, generally but not always in advanced countries. It is of direct concern and interest to this country to ensure that these foci of unique competence flourish. Work done in such laboratories . . . sets standards for fields of science whether they are located at home or abroad. Moreover we are well advised that these laboratories are both able and willing to accept advanced students and senior investigators from this country. Otherwise our development is handicapped.

"The essential problem is to reconcile goals. On the one hand, it is important to secure the benefits of research. On the other hand, it is important to restrain expenditures in general and expenditures that adversely affect the balance of payments.