

terawatts of laser output in pulses of one nanosecond or one quarter nanosecond duration, while the combined output from the Nova and Shiva lasers is expected to be between 190 and 285 terawatts. Testifying before a House subcommittee in February, C. Martin Stickley, the director of DOE's Office of Laser Fusion, testified that "With the requested level of operating funds we believe we can reach the next major milestone in the program, significant thermonuclear burn of fuel pellets by laser-driven implosion, and reach important decision points with each of the candidate driver systems for a fusion reactor."

Other programs. A \$16.7-million authorization and appropriation has been requested to construct a proton storage ring at Los Alamos; it is designed to enhance the neutron-pulse capability (to 2×10^{12} neutrons/sec in a 1-nanosec pulse) of the Weapons Neutron Research Facility at the Los Alamos Meson Physics Facility.

DOD. Defense-related R&D is expected to go from \$11.4 billion in FY 1978 to \$12.5 billion in FY 1979, an increase of about 9%. Research is up 13.5% or \$56 million, to \$468 million. For the Air Force, physics-related research would be increased from \$15.1 million to \$16.6 million; approximately 80% of this would be contracted out. The Army Research Office expects to support \$13.8 million (an increase of \$1.8 million) of physics-related research under contract, while the Office of Naval Research plans to increase its support in these areas from \$22.5 million in FY 1978 to \$27.0 million in FY 1979. (Further details about these programs will be given in a forthcoming issue of PHYSICS TODAY.)

Climate program. A consolidated climate program and budget involving eight Federal agencies has been formulated and will be allocated \$104 million in FY 1979, an increase of 37% over the previous fiscal year. The growth in funding would be used to develop and procure satellite sensors for monitoring the Earth's radiation budget, ozone and ocean climate variables; to undertake a major field study in the Equatorial Pacific to investigate physical processes involved in climate fluctuations; and to pursue basic research on natural phenomena, especially the effects of changes in carbon-dioxide levels in the atmosphere and oceans. —CBW

in brief

Joseph M. Pettit, president of the Georgia Institute of Technology, has been named to the National Science Board, the policy-making body of the National Science Foundation.

Table 1. DOE physics-related research

	(estimated budget outlays) in millions of dollars	
	FY 1978	FY 1979
High-energy physics		
Fermilab	59.1	57.3
Brookhaven	33.2	35.8
Argonne	16.6	15.4
SLAC	31.2	36.9
General R & D	45.4	46.6
Total operating budget	185.5	192.0
Total capital equipment*	42.0	41.2
Total construction*	44.2	59.5
Nuclear physics		
Medium-energy physics	33.0	35.8
Heavy-ion physics	28.1	30.3
Nuclear theory	5.2	5.5
Total operating budget	66.3	71.6
Total capital equipment*	6.7	7.5
Total construction*	4.6	10.4
Basic energy sciences		
Nuclear sciences		
Charged-particle research	6.7	7.5
Neutron and fission research	8.2	8.8
Heavy-element research	2.7	3.2
Isotope preparation	7.4	8.0
Total operating budget	25.0	27.5
Total capital equipment*	1.1	1.3
Total construction*	0	0
Materials sciences		
Solid-state physics	25.2	28.7
Metallurgy, ceramics and materials chemistry	36.2	40.2
Total operating budget	61.4	68.9
Total capital equipment*	5.4	5.9
Total construction*	5.0	16.4
Chemical sciences	53.2	62.3
Engineering, mathematics and geosciences	11.2	23.5
Advanced energy projects	3.0	3.7
Other capital equipment	2.2	1.7

* These figures are budget authorizations, the amounts by which DOE may enter into contracts during the fiscal year; all other figures are budget outlays, the amounts that DOE expects to spend during the fiscal year.

Table 2. DOE fusion research

	(estimated budget outlays) in millions of dollars	
	FY 1978	FY 1979
Magnetically confined fusion		
Confinement systems	88.7	98.7
Development and technology	43.6	52.5
Applied plasma physics	42.7	52.2
Reactor projects	18.1	17.5
Total operating budget	193.2	221.0
Total capital equipment*	29.4	25.6
Total construction*	93.8	83.4
Inertial-confinement fusion		
Advanced lasers	9.5	9.1
Heavy-ion fusion	2.9	3.5
Systems and advanced technology	3.9	3.0
Glass laser	9.7	7.2
CO ₂ laser development	10.6	8.4
Electron-beam source development	4.9	3.0
Fusion experiments	54.8	58.6
Total operating budget	96.3	92.8
Total capital equipment*	13.2	8.2
Total construction*	12.4	26.0

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