News and views

FOR AN INFORMED PUBLIC

HOW SHOULD OUR NUCLEAR WEALTH BE SPENT?

Perhaps the most specific and forceful plea for the public release of certain atomic secrets yet to be made by any highly placed scientist has been advanced by former Atomic Energy Commissioner Robert F. Bacher, now of the California Institute of Technology. In a talk given before the National Parent Teachers' Congress at Long Beach, California on May 24, Bacher declared that the American citizen should have access to some vital information dealing with the possibilities of atomic energy and with the present state of its development in order to judge intelligently whether his government is doing a good job. Essential but still secret information that should be made available for this purpose, Bacher holds, concerns what our present atomic bombs will do, roughly how many we have, and what use might be made of fissionable material if it were not intended for bombs.

At the moment, said Bacher, the technical development of nuclear reactors does not warrant any great use of fissionable material except for reactor development; yet the time is coming when we must decide how best to use fissionable material in the interests of the nation. "It may be necessary," he continued, "even with world tension no less than it is today, to decide whether it is wise to earmark all of our fissionable material for atomic bombs. It may be wiser, in order to assure our long-range industrial development, to put part of our fissionable material into nuclear reactors. . . . We must take great care that the allocation of fissionable material is decided in such a way that our citizens know what decision is being made and what it means to the future of the country. Short-sighted use of all fissionable material for weapons may in the future lead to a national catastrophe. Our fissionable material is a more vital national asset than all the gold in Fort Knox."

With particular reference to the hydrogen bomb question, Bacher emphasized the need for an accurate understanding of what its development might mean to the national security. If this promised to add materially to our military strength, even at great cost and effort and even though it required the conversion of some appreciable amount of our stock of fissionable material into the non-negotiable and decaying form of tritium (which has a half-life of only twelve years), then one might perhaps argue for an H bomb development, he said, but added that it promises nothing of the sort. It would be most helpful to the public in judging whether such a development can be expected to add much to our military effectiveness, Bacher concluded, to know approximately how many atomic bombs we have now.

Four days after Bacher's talk, Gordon Dean, a present member of the Atomic Energy Commission, spoke before a group of Ohio newspaper editors in Columbus on the subject of releasing secret atomic information. "The Russian atomic explosion," he said, "together with several other events, suggests that in the interest of national security it may be wise to declassify rather broadly certain scientific and technical information which the Russians must have possessed in order to achieve an explosion."

ACCELERATING

MORE BIG MACHINES

With 300 Mev synchrotons and synchrocyclotrons budding at scattered points over the Northeast and as energetic a betatron reported in Illinois, there can be little doubt that the springtime of Big Physics has arrived. Other large accelerators have been sighted as far north as Ontario and as far south as Oak Ridge, and from the far west come rumors of still greater wonders to come.

Columbia University's new synchrocyclotron was formally dedicated on May 2 by the University's president, General of the Army Dwight D. Eisenhower, at a brief ceremony held at the Nevis estate, Irvington-on-Hudson, where the big proton accelerator has been installed. John R. Dunning, professor of physics at Columbia, has stated that an energy level of 385 Mev has been reached in operating the instrument. The cyclotron was built with support from the Office of Naval Research. Eugene T. Booth of Columbia was in charge of the three-year construction job, and according to Dr. Dunning, who spoke at the dedication ceremonies, was largely responsible for the successful operation of the instrument. President Eisenhower pointed out that the Nevis estate, formerly owned by the family of Alexander Hamilton, had been donated to the University in 1933 by Mrs. T. Coleman du Pont.

A week or so earlier, the General Electric Company announced the successful operation in its first phase of the GE Research Laboratory's new 300 Mev "nonferromagnetic" synchroton. The electron and x-ray accelerator differs from the Berkeley 300 Mev synchrotron and other similar instruments in that its design eliminates the usual iron-core electromagnet and instead produces the necessary magnetic fields by means of specially designed coils of wire. The Berkeley machine, by contrast, has an electromagnet weighing 130 tons. The GE synchrotron, built under the joint sponsorship of the ONR and the GE Research Laboratory, has been operated thus far up to about a million volts and probably will be working at much higher energies before the end of the year, according to C. G. Suits, vice president and director of research for GE. First erected in one of the old buildings of the Laboratory in downtown Schenectady, the instrument is now being installed in its own building at the new Knolls site in Niskayuna. James L. Lawson, E. B. Gaerttner, W. B. Jones, H. R. Kratz, G. L. Ragan, H. G. Voorhies, and M. L. Yeater were in charge of design and construction.

The first public demonstration of the University of Illinois' new 300 Mev betatron was made at Champaign last February 28 by Donald W. Kerst, the originator of the betatron, who designed and completed the first