

PHYSICS IN GOVERNMENT

200 BeV and beyond

Right on schedule and contrary to the scoffing predictions of many Washington pundits, the National Academy of Sciences site-evaluation committee recommended six possible locations for the proposed 200-BeV proton accelerator. Congress, however, was grumbling over the suggested management for the new machine and over estimates for the 600-1000-BeV proposals. Meanwhile, across the Atlantic, CERN was having similar problems in planning for its 300-BeV device.

The NAS site committee selected Ann Arbor, Mich.; Brookhaven National Laboratory at Upton, N.Y.; Denver, Colo.; Madison, Wis.; Sierra Foothills near Sacramento, Calif.; and South Barrington (or Weston) near Chicago, Ill.

In its report, the site committee noted that "no ideal site had been proposed and that the eventual selection depended on balancing the various factors of physical properties and environment. . . . Each of the sites recommended is outstanding in at least one of the aspects the committee developed as being of major importance and is within acceptable limits with regard to others." Site criteria included physical properties, problems of assembling an outstanding staff, and accessibility "for visiting scientists who will conduct 75% of the experiments." AEC, which had previously reserved flexibility to pick a site not on the NAS list, has announced that it definitely will choose one of the six.

One of the inner circle, South Barrington, Ill., apparently is resisting selection as the site for the \$375-million laboratory. Said one of the town fathers recently, "We moved out here for privacy and fresh air and that's about it. We don't want to move. You might say they're purely selfish reasons, but what else is there?"

With the elimination of 79 other possible locations, Capitol Hill has already heard many protests about the use of political pressure. During recent hearings, Chet Holifield, chair-

man of the Joint Congressional Committee on Atomic Energy, underscored the need for political hands off on the site selection issue. Said Holifield, "This is a problem that has to be solved with a maximum degree of impartiality and openness. If it is not, I can prophesy at this moment that the whole thing will go down the drain when it goes to the House floor for action. I don't know what will happen in the Senate." To which Sen. Jackson quipped, "It will go up the drain!"

During the next three to six months AEC will narrow the choice down to one site. In the meantime additional parameter studies and the development of components for the accelerator will continue at the Lawrence Radiation Laboratory and elsewhere, with the \$2.2 million provided in the fiscal 1967 budget. After AEC decides on a final site and receives authorization to proceed, about two years will be required for detailed design work and four to five years for construction. Testing, alignment and exploratory experimental work will take another year. The 200-BeV machine is expected to go into full operation in the early 1970's at the soonest.

Cheaper machine rejected. After much study and self-questioning about whether it was building the right thing, AEC has turned down the Wilson, Devons and other proposals for building a cheaper 200-BeV accelerator. Samuel Devons had suggested using the AGS injector as the starting point to build a machine at Brookhaven at a fraction of the estimated 200-BeV cost. The proposal of Robert R. Wilson would reduce the initial intensity and experimental area of the machine but leave in the design the capability to go to the full intensity indicated in the Berkeley study. An AEC spokesman said these proposals would reduce the amount and type of research recommended by the Walker and Ramsey panel reports and other studies. "They do not take into sufficient consideration the overall needs of the national high-

energy program. One could build a 200-BeV cheaper, but you get what you pay for in this field. We believe we can fully justify the construction of a 200-BeV as a national facility."

Who will manage? As construction of the new accelerator proceeds, Congress is certainly going to take a closer look at the organization that will run the machine. Although Universities Research Association (URA) has offered its services to AEC and has support in the scientific community, various spokesmen on Capitol Hill have expressed misgivings about URA. Why put a nonprofit organization between AEC and the machine? they ask. Couldn't AEC hire a major laboratory director to run the accelerator? Why are there so many layers of management in the URA organization? What public representation does URA have?

On this last point, Rep. Hosmer has charged, "Some people feel that URA excludes other segments of our country's culture and is not exactly the kind of organization they would like to see the facility placed under. Some reformation will have to be made. You will need a controlling authority that includes representatives of the public, perhaps someone from the Joint Committee and also from the AEC. Because once these people (URA) get behind a wall and only come out to talk their own language, this thing gets far beyond public control. Nevertheless, public support is expected to come to it in copious quantities."

600-1000 BeV. Even as the physics community was coming in for a share of Congressional ire over details of the 200-BeV, Congress was grumbling over plans for higher-energy accelerators. At recent hearings AEC research division head Paul W. McDaniel explained how AEC plans to achieve higher energies by a two-step process, the first to the 200-BeV region and the second to the 600-1000-BeV region. At this point Joint Committee Chairman Holifield saw red and remarked, "I am going

to deliver myself of a little opinion right now on this deal. There is absolutely no limit to the imagination of a scientist, but there is a limit to the budget, to the taxpayer's ability to sustain this imagination. There are going to be some other visionary programs that will have to be cut before we go into this thing because as I see it, the estimate on the 600-1000-BeV is around \$975 million."

McDaniel continued with, "It is necessary to start early because we do not yet really know how to build a 600-1000-BeV machine. It seems to me that, extrapolating our present technology, it is too large a machine to build. It may be too expensive a way to build it. We need to look at new methods."

CERN also has problems. In the midst of our own difficulties, it is perhaps salutary to look at similar strains and anxieties experienced by CERN as it gropes toward its 300-BeV project. Having reduced its site list from 22 to 13, CERN officials must now decide among such names as Gop-

fritz, Focant, Doberdo, and Nardo in nine countries jealous of national honor and economic strength. Design studies as well as general layout and feasibility studies for accelerator components are under way. But the 5.2-million-Swiss-franc budget is being challenged by some member states as too high. They say that the proposed buildup in 1966 implied too early a freezing of design and too large commitments for 1967. Whereupon the CERN scientific policy committee retorted that it would be catastrophic for the future of CERN if preparatory studies for the 300-BeV machine were halted. "The working group would be broken up; it would be difficult to set up again, and its dissolution would give the impression that the project was being abandoned for a fairly long time. This would have irreversible effects in many countries, which would revise their balances between national and international expenditure." All of which has a ring of familiarity to US accelerator enthusiasts.

Copyright revision. Key provisions of HR 4347 would set up a single national system of statutory protection for all written work whether published or unpublished, extend copyright duration from the present 28 years (renewable by another 28 years) to the duration of the author's life plus 50 years, and provide for the fair-use concept without defining the scope of the concept. Physics-book publishers are hoping that the fair use doctrine will remain unchanged in the new bill. There have been strong arguments for inclusion of a clause that would permit very liberal copying, without payment, of copyrighted material for educational use. Such a clause, say the publishers, would have a drastic effect on the already thin markets for high-level text and reference works. The new copyright bill is currently under discussion in subcommittee 3 of the House Committee on the Judiciary.

Metric-study bill. S 774 would authorize the US to conduct a study of what increasing metric-system use in other countries will do to the US (see *PHYSICS TODAY* Feb. 1966, page 120). The Senate has already passed the bill, and the House Science and Astronautics Committee will soon consider it. Committee chairman George Miller expects the bill to come to the House floor in this session.

Patent law. S 1809 would replace several existing government laws with a single uniform policy on patents derived from government-sponsored research and development. Known as the Federal Inventions Act, the bill will be considered by the Senate Judiciary Committee some time after Easter.

NSF revision. HR 13696 is the Daddario bill on the National Science Foundation which hews closely to recommendations contained in the House Science, Research and Development Subcommittee report (see *PHYSICS TODAY* March, 1966, page 56). Key provisions would emphasize increased NSF support in the social sciences and engineering, direct NSF to evaluate the status and needs of US science and to initiate research relevant to national problems, give the National Science Board almost exclusively a policy-making function within the founda-

Bushels of bills affecting the science community

Congress is (or will soon be) busy discussing tariffs on teaching equipment, teacher unemployment compensation, the metric-system study and revisions of copyright and patent laws. At the same time, new bills have been introduced that may significantly alter our overall science posture, the National Science Foundation and geographic distribution of federal science funds.

Importing scientific apparatus. HR 8664 would enable the US to ratify an international agreement on importing educational, scientific and cultural materials (the Florence agreement). The bill would have the effect of eliminating duties and special taxes on many imported instruments and on apparatus used in physics departments throughout the country. The American Institute of Physics has taken the lead in the physics community in endeavoring to bring this bill before Congress. Though President Johnson has urged passage of the agreement, the bill is tied up in the House Ways and Means Committee headed by Rep. Wilbur Mills (D-Ark.). Provided the committee can dis-

pose of more urgent work and Johnson does not propose new taxation (which the committee would perforce take up), HR 8664 has some chance of being discussed by the committee during the current session.

Unemployment compensation. Ironically enough, one of the bills occupying the Ways and Means Committee is also important to the academic community—the bill for revising the unemployment compensation law. Until now the law has not required such nonprofit organizations as colleges and universities to participate in the unemployment compensation program. Though most states permit voluntary participation of the nonprofits, few educational institutions have taken advantage of the opportunity. The Ways and Means Committee is considering administration proposals that employees of private nonprofit institutions be brought under the law's coverage (such employees would include physics professors). Committee spokesmen say there is a good chance that some sort of legal requirement covering the nonprofits will be written into the law.