

LETTERS

Accelerator Site

Recently the Nuclear Science Advisory Committee recommended to the Department of Energy (DOE) and the National Science Foundation (NSF) that a proposed 4-billion-electron-volt electron accelerator be constructed and operated by the Southeastern Universities Research Association (SURA). The recommendation was based to a large extent on the superior design conceived and executed by James McCarthy and his associates at the University of Virginia (News and Comment, 27 May, p. 929; 10 June, p. 1133).

Since that recommendation was submitted, supporters of the Argonne National Laboratory (ANL) have sought to "adopt" the Virginia-designed accelerator and are using their influence in DOE and Congress to urge that ANL be authorized and funded to construct and operate the SURA machine. The accelerator design proposed by Argonne was not recommended by the DOE-NSF committee.

SURA is a vital organization. The 23 university members have contributed more than half a million dollars in resources over the past 4 years to enable SURA to enter the competition for this new facility and submit a scientifically sound proposal. This effort represents an excellent example of how universities, as a major national resource, can collaborate to serve our national interests—in this case the leadership of the United States in nuclear science.

It would be tragic in consequences if this effort were subverted and McCarthy's winning design were awarded to a laboratory that was unsuccessful in the competition.

The integrity of U.S. science is at stake.

HARRY D. HOLMGREN*
*Department of Physics and
Astronomy, University of
Maryland, College Park 20742*

FRANK L. HEREFORD, JR.†
*Office of the President,
University of Virginia,
Charlottesville 22903*

*President, SURA. †Chairman, Council of Presidents, SURA.

It is a credit to American science that the scientific community was able to put together such a distinguished panel to review the merits of the proposals for the proposed multi-GeV (billion electron volt) electron accelerator. I congratulate them and the faculty of SURA, who

developed a very good proposal. I have already stated to the Nuclear Science Advisory Committee (NSAC) that I will back wholeheartedly the proposal eventually chosen. Our primary concern is to make sure the facility finally built is one that will contribute most to American science.

The Board of Governors for Argonne National Laboratory, after reviewing the report of the NSAC panel, recognized that even the most hard-working, conscientious, and discerning groups sometimes reach incorrect conclusions and believes that has happened in this instance.

Let me explain why. The NSAC panel stated that "both designs are feasible . . . either could very well form the basis for an extremely powerful national facility" and gave three reasons for recommending the SURA proposal: (i) the consortium has pledged a number of new professorships; (ii) SURA's Linac Stretcher Ring (LSR) design could be more easily extended to 6 GeV; and (iii) provided that the beam current specifications are downgraded, the LSR is believed, "although not unanimously," to be a more "conservative" design. We felt and continue to feel that these justifications either (i) do not follow logically from the report, (ii) fall outside the initially stated criteria, or (iii) exceed the proper purview of the panel. The last two reasons given appear to be at variance with the recommendations made by the NSAC Subcommittee on Electromagnetic Interactions (the Barnes committee), established to recommend the optimum parameters for a national electron accelerator. These were the criteria to which the Argonne team devoted its design efforts. Their design is the only one that met these criteria.

The panel raised questions concerning the Argonne design. These centered around the stability and alignment of the sector magnets, possible beam-centering errors, and the effects of quantum fluctuations in synchrotron radiation at higher energies. However, alignment and stability goals for GEM (the Argonne design) have been achieved at existing facilities. The growth in beam size from quantum fluctuations is well understood quantitatively and has been shown by calculations to lead to negligible beam losses up to 4 GeV. Indeed, for an upgraded accelerator of the GEM design operating at 6 GeV, beam losses from quantum fluctuations can be safely absorbed. Not all the calculations and experimental evidence supporting these points were available to the panel during its deliberations.

The offer of tenured professorships

was given as a major reason for recommending the LSR proposal. Wherever this facility is located, it will generate new faculty positions.

It is incumbent upon the scientific community to use available funds in a prudent and responsible manner. The Department of Energy's own Energy Research Advisory Board recognized this fact when it recommended that DOE direct work to the existing multiprogram laboratories "in lieu of establishing new laboratories." The NSAC panel notes that at Argonne there exist a trained design and project management staff, senior accelerator physicists and engineers having considerable experience, many user support services, and a variety of buildings and facilities. It notes further that Argonne is a half-hour from O'Hare airport.

Of SURA it says, "little in-house engineering or technical help is available to them. . . . The SURA project, if approved, would be based at a new laboratory having no established reservoir of scientific, engineering, technical, or administrative staff," in essence a "green site." The panel also recommends that a different site be considered.

It is legitimate to ask that these issues be considered further. Those ultimately entrusted with making this decision, so important to nuclear physics, the scientific community as a whole, and the American taxpayer, must be confident that there has been full and complete discussion of all issues. The goal is obtaining the highest quality of science at the lowest cost. Argonne is committed to that goal.

WALTER E. MASSEY
*Office of the Director,
Argonne National Laboratory,
Argonne, Illinois 60439*

Ownership of Computer Program

The recent article by Gina Kolata relating to ownership of the copyright to the Symbolic Manipulation Program (SMP) developed at Caltech under the leadership of Stephan Wolfram (News and Comment, 27 May, p. 932) is both incomplete and inaccurate as to several details, as might be expected for its being researched largely, if not exclusively, by long-distance telephone.

There is a particularly unfortunate statement that requires refutation, namely, "Wolfram was given an ultimatum: Resign from the company or resign from the university." This statement is simply not true. There was no ultimatum and, in