

Proliferation-resistant breeder

A box on page 62 of your August 1984 issue carried the title "Argonne proposes 'proliferation-resistant' breeder." It stated that the "integral fast reactor" is designed to make it very difficult or impossible to use as a source of plutonium for nuclear weapons.

What this refers to is the Experimental Fast Breeder, EBR-II, designed and operated by Argonne National Laboratory at the National Reactor Testing Station in Idaho. It was the first nuclear power plant to produce electricity, in December 1951, and it has been an extremely useful research tool ever since. It was built with collocated hot cells with the intention to reprocess and recycle the fuel "integrally." Although many of the recycle operations were eventually successful, it was not until recently that all of the technical problems were solved. If the funding is approved, it is proposed to complete this design and to demonstrate its safety and efficiency.

This integral design of fast breeder, reprocessing and fuel fabrication does have the advantage that domestic adversaries, even including operators of the facility, would find it very difficult to extract plutonium without being apprehended. However, it would not prevent a government in another country from extracting plutonium from its reactors. Breeder reactors produce excess plutonium that an operator could and would extract.

As far as proliferation is concerned, this design is not significantly different from any other reactor. For protection from domestic adversaries, this integral design may have advantages, although a high degree of physical protection has been demonstrated for the transportation of plutonium and for separate reprocessing plants.

The EBR-II has contributed much to the development of fast breeders and has a long record of efficient power production. The important objectives for integral operation are to determine the factors of economy, resource utilization, safety and resistance to sabotage.

WILLIAM HIGINBOTHAM

11/84 Brookhaven National Laboratory

AIP directory

When my 1984-85 *Directory of Physics and Astronomy Staff Members* arrived, I was very surprised to find that I was not included in it. I was even more surprised to find that none of my fellow staff members at RCA Laboratories were included, although some of our upper-level management was. I am,

however, in very distinguished company—I was unable to find listings for Mildred Dresselhaus, former president of the APS, and for Thomas Braid, editor of *Reviews of Scientific Instruments*.

The PHYSICS TODAY article on page 93 of the January issue helped me to understand what had happened: AIP got the data for the *Directory* from the listed institutions, "and some institutions did not respond to requests for information—in certain cases, as a matter of policy."

My limited sampling of the *Directory* entries indicates that this method of generating a directory is woefully inadequate. The resulting directory is at best unreliable and at worst seriously misleading.

The PHYSICS TODAY article indicated that the *Directory* had become "an increasingly costly publication." To achieve lower unit costs, AIP decided to print many more copies. Printing more copies of an inadequate directory at an increased aggregate cost hardly seems to be a good use of our funds. In view of the inadequacies of the *Directory*, I suggest that it would have been more reasonable to cease publication of the *Directory of Physics and Astronomy Staff Members* and to publish only the *Directory of APS Members*, for which the data are much better.

As an alternative, it might be reasonable to merge the listings of the two directories, providing listings by locality, by institution or both, depending on the available data. Membership in APS or other societies of AIP could be indicated by a letter code, as is already done for divisional affiliations. Because there is a large overlap between the two directories, we might even find that it is cheaper to publish a single, good, comprehensive directory than to publish an APS membership directory and a mediocre staff directory.

A similar scheme is used by the American Mathematical Society, the Mathematical Association of America and the Society for Industrial and Applied Mathematics in their combined membership list. If our mathematics colleagues are capable of preparing a rational directory, we should be able to do the same.

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THE EDITOR OF THE 1984-85 *Directory* COMMENTS: The *Directory of Physics and Astronomy Staff Members* is not a list of members of a specific organization. For 25 years it has provided listings of academic departments and, more recently, of research and development organizations and their staff members who do research or who are trained in physics, astronomy or physics-related fields, regardless of their

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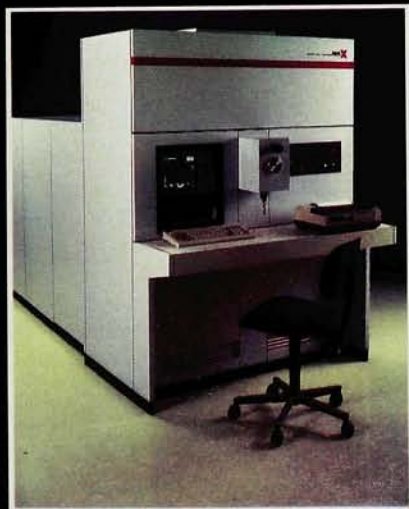
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membership in a professional society. As such, the inclusion of specific persons does depend upon the information supplied by laboratory directors and department chairs. With the wider distribution of the 1984-85 edition, we hope that individual staff members will urge their laboratory directors and department chairs to be more responsive to our requests for information for the 1986-87 edition. Individuals whose names are missing from the last edition should complete the form on the last page of the *Directory* and return it to the AIP Education Division; we will inform the appropriate laboratory director or department chair that that person feels that he or she should be included in the staff list for the next edition. If a copy of the *Directory* is not available, the AIP Education Division would be happy to supply a copy of the form.

Because about half of those listed in the *Directory* are not members of any AIP Member Societies, the *Directory* provides information about physicists, astronomers and scientists in physics-related fields that is not available elsewhere. It also provides information for those interested in contacting academic departments and research laboratories rather than specific individuals. The *Directory*, which is published by AIP rather than the The American Physical Society, certainly is not a replacement for the *American Physical Society Membership Directory*.

Responding to an earlier suggestion, AIP is studying the feasibility of combining in a future edition of the *Directory* the membership lists of the nine AIP Member Societies with the list of staff members provided by academic departments and research and development organizations. The lists of academic departments and research and development organizations would continue to include only the information supplied by the listed organizations. If this were done, the number of individuals listed would increase from 30 000 to about 80 000.

DION W. J. SHEA

AIP Education Division

4/85

Lateness

I find myself morbidly fascinated by the growth of polemical rhetoric contained in your Letters department. It seems to span a diversity of items ranging from libel to ideological leanings and personal criticism, interspersed with evidently harmless matters of technical and historical merit,

and now and then an equation or erratum or two. The November issue of *PHYSICS TODAY* seemed to reflect a more lively collection of communications than any I can recall recently.

With these comments I hesitate to bring up a mundane matter regarding timeliness of and in *PHYSICS TODAY*. Today is the 4th of December, and on this day I received my November issue of *PHYSICS TODAY* in the post. Indeed, I have consistently received *PHYSICS TODAY* a month late even after having written to your offices a few years ago to this effect. As far as I know, the mail services at our laboratory are not usually more than two or three days late in delivery, which leads me to inquire if (a) your facilities mail out issues long past the first of the month for that issue, or (b) there is something anomalous about domestic delivery to the West coast. I have at times been disconcerted by reading announcements of meetings and similar events a day or two *after* such have taken place. And, as if that were not enough, I find in the September 1984 issue announcement of the 1983 E. O. Lawrence Award winners—which, I assured myself after identifying the recipients, was indeed correct. We got our own news of the 1984 winners shortly prior to that.

In any case, I am concerned about not receiving *PHYSICS TODAY* in a timely manner, and I would like to ask if anything can be done about it. If *PHYSICS TODAY* is intended to function as a news magazine for the physics community, which I am sure is part of your policy, then I suggest that timeliness of reception be looked into closely. I may not be the only APS (or ASA) member with this problem.

STEPHEN I. WARSHAW

12/84 Lawrence Livermore Laboratory

The November 1984 issue was mailed on 20 November. Now that I've become editor of PHYSICS TODAY, one of our primary goals will be to mail each month's issue during the first few days of that month.

After a staff change at PHYSICS TODAY, the 1983 Lawrence Award was overlooked. When the omission was discovered, we carried the story late rather than not at all.

GLORIA B. LUBKIN

Editor

5/85

Med school: A bitter pill

I absolutely disagree with Robert J. Yaes's assessment (August, page 13) of the value of a physics education to a practicing physician. I too decided to study medicine after having worked in elementary-particle physics. In contrast to his reaction, I find that my physics orientation to problems in medicine is very productive. It enables me to analyze clinical problems in a systematic way that my "rote memory"



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