

# LETTERS



Letters, unlike papers and technical notes, are for the rapid publication of both fact and opinion on technical subjects and are therefore not subject to the referee review process.

## LEAD ISOTOPE SEPARATION

Dear Sir,

Reference is made to the article "Liquid Metal Breeder Reactor (LIMB) Nuclear Evaluation" by Robert J. Teitel and John B. Brown on page 13 of the February issue of **Nuclear Applications**.

Some time ago I called to the attention of Dr. Teitel the advantage of tetramethyl lead over tetraethyl lead in isotope separation. However, the use of enriched lead depends on whether the over-all economics of this concept permits the extra burden of the separative process.

Consider, also, the growing alarm over the use of leaded gasolines as related to air pollution and the lung cancer mystery. In addition, there is some concern over soil contamination by lead residues along highways.

The availability of a volatile intermediate in quantity production is a significant factor particularly since the diffusion separation is inherently expensive. However, with increased pressures from the anti-pollution factions this advantage seems likely to disappear long before breeder power reactors attain importance.

*Frank Kerze, Jr.*

Systems Analysis Branch  
Division of Reactor Development and Technology  
USAEC, Washington, D.C.

## DAMAGED CONTROL-ROD-BASKET REMOVAL

Dear Sir,

Not infrequently, size and space limitations present reactor operators with problems in the disposal of large or unwieldy irradiated objects from reactor vessels or spent-fuel storage facilities. Often the problem seems disproportionately difficult when in reality a simple straightforward solution may be close at hand. In the interest of reassuring other reactor operators, we offer such an experience at the Army's SM-1 reactor along with the method we ultimately chose for solution of the problem. The simplicity of the tool devised, and the ease with which the operation was conducted, once the problem was placed in proper perspective, should encourage other operators.

During fuel-handling operations conducted in June 1960, two control-rod baskets were damaged. Although repair of one was accomplished in place, attempts to

repair the second were unsuccessful. The dimensions of the damaged assembly (approximately 9-ft (2.7m) long, with the dashpot piston and rack portion of the drive attached) precluded its removal intact through the fuel-transfer chute. Disassembly was impractical, as was also removal through the top of the vapor container or through the side entrance to the building. The damaged basket assembly was stored in the inner shield tank while preparations were made for cutting it into manageable lengths underwater.

A special cutting tool, locally fabricated from commercially available materials, comprised an air motor driving a 12-ft (3.7m) shaft connected to a flexible grinding wheel (Fig. 1) and the necessary handling and clamping devices. Transverse motion of the grinding wheel was provided by cam action through tension on the feed chain. Although means of removing cuttings from the work area had been provided by means of pump suction, it was not utilized during the cutting operation for fear of damaging the available pump.

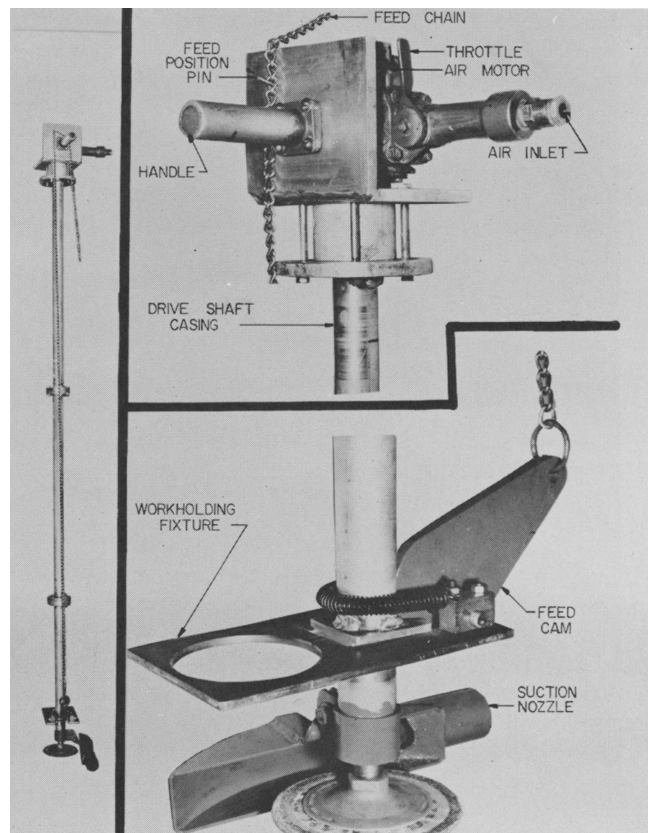


Fig.1: Cutting Tool

To prevent tools, equipment, or cut pieces from falling into the reactor portion of the tank, a plastic-lined sheet-metal cone was suspended beneath the work area during the cutting operation. After some difficulties with loss of visibility due to water clouding, binding of the cutter bearings, and misorientation of the cutter, the basket assembly was successfully cut into three pieces and discharged to the spent-fuel pit without serious incident.

The operation demonstrated to the staff that simple tools and procedures can be devised on an ad hoc basis for the unusual and infrequent disposal problems that are bound to occur at any reactor facility. Details of the design of this particular tool and the procedures employed in this case were presented at the Conference on the Problems of Operating Research and Power Reactors, sponsored by the Reactor Operations Division of the American Nuclear Society in Ottawa, Canada, during October, 1963 and are available from this office.

Garrett V. Sidler  
John C. Bouldin  
Charles R. Feaveyear

U. S. Army Engineer Reactors Group  
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#### THE RIGHT FLAVOR

Dear Sir:

Now that I have had a chance to see the first issue of **Nuclear Applications** I can offer to you and the American Nuclear Society staff my sincere congratulations for producing a journal of great excellence. It looks good and reads well. I particularly like the insertion of the Reader Service Card on the last page and the use of a full-size page for it. But most important of all, I think the flavor has been established. This flavor is one for which I was hoping. The Society can be justly proud of its new publication.

James R. Lilienthal

Los Alamos Scientific Laboratory  
Los Alamos, New Mexico

#### A WORD OF CONCERN

Dear Sir:

I have received the first issue of **Nuclear Applications**, and am pleased to send you a few comments.

I have enjoyed the presentation of the journal; the type, in particular, is very attractive: neat, large, simple, and pleasing to the reader. I certainly welcome the change in the name of the journal; when I learned that the name "**Nuclear Technology**" had been accepted, at first, I thought it was definitely going to be a birth defect. It is precisely in relation to the contents of the journal where I would like to add a word of concern. Despite the name change, this first issue impresses me as

totally technological. I have enjoyed the article on burn-up, but it still represents "fall out" from reactor technology. Let us not forget that there are two large fields for which reactors are mere tools: activation analysis, with its whole series of interesting new basic studies and developments, and applications of radioisotopes to basic sciences. Moreover, in these fields one may sometimes forget the existence of reactors altogether, as in 14-MeV, or charged-particle activation analysis, for example. I hope articles on these, and related subjects will find some room in future issues of **Nuclear Applications**.

E. Ricci

Oak Ridge National Laboratory  
Oak Ridge, Tennessee

(Ed. Note: We agree with Mr. Ricci's concern and hope that publication of his letter will stimulate action from potential authors of such papers and of papers on other subjects within our scope but not adequately represented in these early issues. We cannot publish papers which we don't receive.)

#### A LOGICAL VEHICLE

Dear Sir:

Congratulations on the first issue of **Nuclear Applications**! The articles are stimulating, the format refreshing and lively. I was most interested in your commentary about things to come as well as philosophy for the journal. We of the Shielding Division have eagerly awaited the birth of a new American Nuclear Society journal, which may be a logical vehicle for a group of shielding papers that have not previously had a proper home in ANS publications. We have urged members of the shielding community to give earnest consideration to submission for possible publication in **Nuclear Applications**, and I hope you will receive good papers from our colleagues.

W. E. Kreger

Chairman, Shielding Division  
American Nuclear Society

#### DESCENDING TO THE READER

Dear Sir:

I have just reviewed the first issue of **Nuclear Applications**, which we had been awaiting with keen anticipation. There is certainly a need for such a Journal to be published by the American Nuclear Society. I was impressed, in general, with the technical content of the papers, and think you are to be congratulated on making a fine start in the difficult job of initiating such a journal.

However, I was not favorably impressed with the format, which seemed quite imitative of commercially