

offered to allow inspection of non-military nuclear installations to offset any hypothetical commercial advantage they might otherwise obtain.

The ideal safeguard system would involve automatic controls. Item identification and material measurement would be automatically monitored, and materials could only be moved through specific access points. Effective tamper-resistant seals are apparently feasible, and because the object of the scheme is to detect weapon production and not to prevent it—a practical impossibility without going through the Security Council—it is possible that within a few years at least the technical problems may be overcome. That would at least leave the field clear for the financial, legal and political battles, and remove the alibi of technical infeasibility.

#### INFORMATION

### Keeping Physicists Aware

PHYSICISTS in the United Kingdom and the United States appear to be satisfied with the current awareness journal *Current Papers in Physics* published jointly by the Institution of Electrical Engineers and the American Institute of Physics, but they feel that some changes could be made in the layout of *Current Papers*. These are some of the results from a joint study, made by the IEE and the AIP in 1966, the first year of publication of the journal. Panels of physicists in both countries took part in three tests. The first investigated the methods used to keep up to date before *CPP* appeared and was reported earlier this year (see *Nature*, 217, 704; 1968). The second and third tests—on users' comments on the coverage, format and arrangement of *CPP*, and the actual use made of it—have now been published.

The second study was made after three months of publication of *CPP*. Two panels of 239 physicists in the UK and 586 physicists in the US answered questionnaires. On the coverage of *CPP* most of the physicists preferred "the same as *Physics Abstracts*". Acceptance of the principle of arrangement under broad subject headings was almost unanimous in both countries, and three-quarters of the panels in both countries also felt that the order in which these broad subject headings were arranged was convenient. But there was much less satisfaction with subheadings. Several respondents also requested a smaller page which would be easier to handle, and layout was criticized by 12 per cent of the US panel and 29 per cent of the UK panel. On the whole, members of the panels opposed the addition of features such as indexes and expanded titles. In their summary of results the authors of the reports, Margaret Slater and Stella Keenan, say of the second test that most of the physicists on the panels find *CPP* a "useful and workable tool"—59 per cent of the US panel and 63 per cent of the UK panel said that they did not want any other form of current awareness journal. This must augur well for the future success of the journal.

The purpose of the third test was to get some idea of the relative interest shown in the various subject sections of the journal, and of the extent to which the sections provide useful material to interested physicists. The test analysed the use of one particular issue (October 10, 1966). A total of 608 physicists indicated

the sections they read in that issue and in what order, and at the same time made requests for either an abstract or the full text of references that were of interest. Two patterns of use were discovered; 52 per cent of the US panel and 47 per cent of the UK panel used sequential scan, that is reading *CPP* from front to back cover omitting sections of no interest. The remainder of the panels looked at the sections in the order of interest to them, the order of use being determined by subject field, not layout. As might be expected, the users of sequential scan looked at more of the 58 sections of *CPP*—an average of 9.5 sections for this group as opposed to an average of 7.5 for the other users. An attempt was then made to try to relate the use made of *CPP* with the specified subject field of the user. This allowed the panel to be divided into "narrow" and "broad" users. For some unexplained reason, the US users were found to be narrower in their use of *CPP* than the UK panel.

#### DETERGENTS

### Active Sites in the Wash

BIOCHEMISTS are drilled from youth to treat enzymes with respect—never to let their temperature stray far from 0° C, never to let the pH differ much from 7, never to agitate them and, above all, never to let detergents get near them. Given that commercial enzyme preparations are also extremely expensive, biochemists were sceptical when earlier this year both Procter and Gamble and Unilever announced in Britain that enzyme detergents are going to wean British housewives away from the familiar products such as "Seruf" and "Fuzz".

The use of enzymes in washing up has a surprisingly long history. A Dr Otto Röhm took out a patent on the idea in 1913, and periodically since then attempts have been made to establish cleaning products based on enzymes in the mass market. Only in the past few years, however, have enzymes become cheap enough and reliable enough to be a serious competitor for the traditional detergent. Enzyme brands now account for a fifth of detergent sales in the Netherlands, and "Ariel" and "Radiant", the new British enzyme brands, are outselling other brands in some parts of the country.

There is some rationale behind the venture. Modern surface-active detergents such as the alkyl-aryl-sulphonates are ideal for removing fatty stains from fabric but are less efficient with protein and carbohydrate stains. The enzyme products contain proteinases and amylases and are claimed to be effective against a repertoire of stains—blood, gravy, sperm, milk, chocolate, egg and sweat—all of which are otherwise obstinate because of their protein or carbohydrate components. The manufacturers will not divulge the identity of the enzymes they are using, but the bacterium *Bacillus subtilis* appears to be the standard source for both proteinase and amylase. Early enzyme cleaners to reach the market were designed for pre-soaking the wash, before the final hot laundering, but the latest products are all-purpose mixtures of enzyme and orthodox detergents.

These combined products use a heat-stable and alkali-stable variant of the proteinase usually produced by a mutant strain of *B. subtilis*. The discovery of this variant was necessary before enzyme cleaners could