

# The Library Program of the U. S. Atomic Energy Commission Technical Information Service\*

BY I. A. WARHEIT, PH.D.

*Atomic Energy Commission Laboratory  
Oak Ridge, Tennessee*

**B**ECAUSE of stringent security requirements the original atomic bomb project of the Manhattan District of the U. S. Corps of Engineers was strictly compartmented into a group of programs and, except for the very top level, there was no exchange of technical information among these compartments. This was expensive and wasteful, for much research had to be duplicated. It was deemed necessary though as long as the war existed and as long as the ultimate purposes of the atomic energy project could not be revealed.

As soon as the war was over, however, an immediate effort was made to release, under proper safeguards, the knowledge gained. There were three major aspects to this program:

1. To declassify, that is, remove the label of secrecy from all possible research and development reports as permitted by the security requirements of the nation.
2. To gather together the results of the wartime research and publish these in a convenient series of volumes. The *National Nuclear Energy Series* currently being published by the McGraw Hill Book Co. is the end result of this program.
3. To provide an over-all library service to the project scientists and to the public including the abstracting, cataloging, and dissemination of research and development reports.

In this talk we shall confine ourselves to the third phase, the library program.

The material in hand which had to be organized was in the form of research and development reports. In general such reports or separates have been treated as the step-children of librarianship. There are well established patterns for handling books and journals and journal articles, but except for a catch-all of "government documents" little has been done for the scientific and technical report. Actually the research report today is part of a long, normal development of scientific publication. From the great treatises and texts and on through the

\* Abridgement of address given at 50th Annual Meeting, Medical Library Association, Denver, Colorado, June 29, 1951.

communications and publications of the learned societies, the scientific and technical journals, the reviews, and abstracts, the research report is today becoming more and more a vehicle for scientific publication. It is not the purpose of my talk to go into the long and fascinating story of scientific publication. It need only be recognized that the individual, separate research and development report has become one of the major media for publishing the results of scientific research. It has therefore become increasingly necessary for the librarians to develop standards and procedures to process these reports.

The librarians of the atomic energy program have worked on this problem, developing forms of entry, subject headings, abstracting techniques, etc. appropriate to the special requirements of research reports. The same problems also have been faced by many other agencies dealing with technical documents. A little over a year ago, therefore, four of these agencies—the Central Air Documents Office, the Navy Research Section of the Library of Congress, the National Advisory Committee for Aeronautics, and the U. S. Atomic Energy Commission—got together informally and after a series of meetings agreed on certain rules and procedures for the library processing of research reports. But more of this later.

The U. S. Atomic Energy Commission carries on its work through individual contractors who operate the plants and laboratories on behalf of the Commission. Each plant or laboratory has its own separate technical information office or library system to take care of its needs. The Commission itself operates the Technical Information Service as a centralized library and publishing activity which serves the technical information offices and libraries of the individual sites. The AEC Technical Information Service is composed of a Washington headquarters staff and three operating branches at Oak Ridge. There is an Administrative Branch that takes care of the necessary cost systems, budgets, personnel, and other operational functions of the TIS. The Publishing Branch does all the necessary editing, composing, art work, and printing. The Reference Branch performs the library functions of abstracting, cataloging, reference, and distribution of reports. This branch is divided into three sections: a document control section, a cataloging section, and a technical services section.

The document control section, in addition to being responsible for the filing, shelving, and distribution of reports and all the attendant housekeeping chores of a large collection, has the difficult responsibility of controlling a very large mass of classified material. The necessary accounting, inventory, and detailed control are expensive and time consuming. This problem is so large that at most of their meetings the AEC librarians and document control officers have concerned themselves with the techniques and procedures for the accounting and controlling of classified documents. The TIS itself has developed IBM punch card methods for the logging and control of its classified reports. This system makes possible the use of a single card for the mechanical preparation of the

inventory record and the receipts and other transmittal forms. The IBM equipment is also used for preparing indexes, union lists of serials, and for reporting and tabulating the work flow through the various units: descriptive cataloging, abstracting, subject cataloging, catalog card distribution, etc. The document control section is also responsible for the microfilming program. The filming of the AEC documents should make possible extensive retirement of little used or duplicate reports with the attendant saving in vault space and inventory costs.

The cataloging section is responsible for the descriptive and subject cataloging and the abstracting of all reports and open literature pertinent to the various research programs of the AEC. The catalog cards are distributed to all AEC installations but are not available to the general public. The abstracts, however, are published in *Nuclear Science Abstracts* which, with its cumulative indexes, gives the librarian the bibliographic information, in what we hope is a convenient form, necessary to find and identify all the technical publications of the AEC. In addition it serves as a useful library tool for the scientific aspects of atomic energy. In order to keep the abstracting costs as low as possible and to keep to a minimum the duplication of effort, cooperative scanning of the published literature is used. Under this system the bibliographers and abstractors who scan the medical literature for *QCIM* select material for *Nuclear Science Abstracts*. The bibliographers at the Department of Agriculture while searching for the *Bibliography of Agriculture* check and photostat the articles which should be abstracted in *NSA*. Assistance is also received from the U. S. Geological Survey and, it is hoped, similar cooperation will be worked out with the Army Medical Library.

A declassified version of the subject headings used by the AEC will be published very shortly and distributed to interested librarians. The AEC Technical Information Service would very much appreciate receiving comments and criticisms of these subject headings which would assist in improving the indexing being done by the cataloging section.

The technical services section handles all the reference requests and prepares the necessary bibliographies and literature searches. All formal bibliographies are issued in two parts, classified and unclassified, and the unclassified portion is made available to the public as a sale document. In general, literature searches are done in response to project requests and no special bibliographies are prepared for the public except as they further the programs of the AEC.

The technical services section also carries on an extensive exchange program with foreign and domestic research institutions, universities, libraries, and other publishers of research papers. The material thus received forms an important part of the literature scanned for the abstract journal.

In the Act setting up the Atomic Energy Commission, the Congress of the United States specifically set forth as one of the aims of the Commission that it should disseminate scientific and technical information to encourage scientific progress, and to share information concerning the practical industrial applica-

tion of atomic energy. The AEC takes this responsibility of disseminating its technical and scientific information very seriously and does everything possible to make this information available to the public. All material that may be released without jeopardizing our national security is declassified. The authors are encouraged to publish their papers in the regular scientific and technical journals or read them at professional meetings. Special compendia are prepared under contract with the AEC and published either by GPO or commercial publishers. Papers which cannot be released through normal book or journal publication are printed by the AEC and, with the author's permission, made available by sale through the Office of Technical Services. Originally the AEC maintained its own sales agency, but as soon as it was practical, all sales activities were turned over to the OTS.

Unfortunately not all AEC unclassified and declassified reports can be made available for sale. Many papers are intended for journal or book publication and therefore cannot be given general public distribution in competition with commercial publication. Other papers are restricted by their authors because of incompleteness or for stylistic reasons. It was necessary, therefore, to develop some means of getting these non-sale items to legitimate requestors. By agreement with a group of editors of scientific and technical journals and with the assistance of the American Library Association a group of all-depository libraries was selected. These forty libraries receive all AEC non-classified reports and they have agreed to provide library service for these documents in their geographic areas. In addition, over 150 libraries receive the AEC sale documents and many other institutions receive selected reports in exchange for their publications. Whenever a library is unable to provide the necessary service, the Reference Branch of the AEC Technical Information Service is prepared to help. In the last fiscal year, for example, the Reference Branch handled over 10,000 requests from the public.

Thus a library can obtain the necessary AEC materials either directly from the Reference Branch through exchange agreements or by virtue of AEC research contracts, or receive all sale reports as a select depository, or borrow from the local all-depository. Sale reports may also be purchased from OTS. The actual availability and source of each document is listed in the annual index of *Nuclear Science Abstracts*. Since it is impossible to tell in advance the actual availability of each report, it is not practical to provide this information when each title is abstracted in *NSA*, for our usual practice is to abstract from the manuscript report before it is published.

A word about the cooperative program with the Central Air Documents Office, the Navy Research Section of the Library of Congress, and the National Advisory Committee for Aeronautics. These three agencies and the AEC have developed certain cataloging standards for the handling of research and development reports. Special card formats have been developed, forms of corporate entry agreed upon, and a program is under way for the development

of common subject headings. These will permit the interfiling of each agency's catalog cards, thus greatly increasing their utility and, of course, doing away with the enormous duplication of effort when each agency cataloged everything itself. Utility was the guiding principle in all decisions. Since modern research is often carried on by research teams and personal authors and titles of reports may vary, the corporate author was chosen as the main entry. The side tracing on the catalog card was chosen to permit the assembling of cards into abstract journals and bibliographies and maybe even book catalogs of standard format. The typography—all capitals for the titles for example—was selected for greatest legibility in rapidly scanning a catalog or abstract journal. The forms might seem a little strange to the conservative librarian, but they were adopted with definite purposes in mind.

The AEC Technical Information Service also carries on experimental and research work in library activities. An IBM card sorting system is being developed to sort 3 by 5 library cards in order to speed the packaging and distribution of catalog cards. In the past year we have distributed over three and a half million cards and thus any improvement or mechanization of card distribution should represent a saving. IBM techniques have also been worked out for preparing journal indexes and for coding the nuclear information of the isotopes. Codes are also being developed so that the Rapid Selector can be used for AEC materials. A facsimile machine which rapidly transmits full size copy from books and bound periodicals between widely separated libraries is now in operation in the Oak Ridge area. Research is also being carried on as to the best microfilming techniques in order to overcome the inconvenience or drawbacks found in long reels or microcards. Not all the research promises success, but an appreciable amount has, to date, proved very useful.

A final word to medical librarians. In general, almost all the AEC research in biology and medicine is unclassified and widely available. As a rule, the results of the AEC sponsored research in medicine are published in the usual journals and books. *Nuclear Science Abstracts* generally records all such publications. Since so much of this research is published in the journals, the AEC does not, as a rule, republish these papers in the form of AECU or AECD reports even though they may have been originally issued as AECU's or AECD's. Therefore there is no such thing as a complete file of AECD's or AECU's which can be conveniently bound into an unbroken series. Nor is it possible to predict which of the many titles issued will be published as an AECU or AECD report. Many librarians write us for missing numbers so that they might bind their files of AEC reports. In most instances we have to refer them to journal articles and advise that separate issuance as a report is not presently planned.

Along with members of other professions, librarians are finding the new field of atomic energy a great challenge. It is only through intense application and unfettered original thinking that this challenge can be met successfully.