Reactor Accidents To Be Studied by International Team

A formal agreement providing for dosimetry experiments to be carried out at Boris Kidric Institute at Vinca, near Belgrade, was signed recently by officials of the International Atomic Energy Agency and of the Government of Yugoslavia. The experiments, to be undertaken as part of the IAEA research program in health and safety, are designed to determine the exact neutron and gamma ray doses which were received by scientists during an accident at Boris Kidric Institute on 15 October 1958.

The incident involved eight young Yugoslav scientists, six of whom were treated by a method of bone-marrow grafting at the Curie Hospital in Paris. This was the first successful application of bone-marrow transplanting techniques in human beings. All but one of the six survived. The other two scientists involved in the incident, who received smaller doses of radiation, were treated in a Belgrade hospital and recovered.

IAEA To Plan the Research

The Yugoslav Nuclear Energy Commission will place the Boris Kidric Institute's zero-power reactor at the agency's disposal for the experiments and for the necessary preparations, which will be the responsibility of the agency. The agency will publish a complete scientific report on the results of the work, which is to be completed on 31 May.

The dosimetry measurements will be carried out by a team of experts under the technical direction of K. Z. Morgan, director of the Health Physics Division, Oak Ridge National Laboratory. The French Atomic Energy Commission has offered to participate in the project by providing equipment and experts to modify, restart, and operate the reactor for the experiment. Negotiations between IAEA and the French authorities for this part of the project are well under way.

Radioactivity in the Environment

The IAEA also announced recently that it would undertake to measure and analyze samples of air, water, soil, and food to help determine the degree of radioactivity in man's environment. This work, which will be done in the agency's laboratory now being built near Vienna, will be undertaken at the request of member states and of international organizations which cooperate with the agency. The IAEA will collaborate in this area with the United Nations Scientific Committee on the Effects of Atomic Radiation.

Arrangements will also be made in the Vienna laboratory for scientists from interested member states to receive a limited amount of training in the relevant techniques. The agency's assistance may also take the form of providing experts and equipment to member states for carrying out measurements on the spot and to support national programs in this field. In addition it is expected that the work of the agency will help in establishing international standards of sampling, measurement, and analysis.

Automation Improves Efficiency of Technical Information Agency

The groundwork and first phase of a massive transition to automation by a major technical information agency is reported in a new Department of Defense publication just released through the Office of Technical Services, Business and Defense Services Administration, U.S. Department of Commerce.

Every day some 1200 to 3500 requests for specific reports reach the Armed Services Technical Information Agency at Arlington Hall, Va., which operates to provide Department of Defense agencies and their contractors, on request, with copies of research reports prepared by or for the military agencies. There are nearly a million documents in the ASTIA collection, which is growing at the rate of 30,000 titles per year.

Until an automatic data processing system came into effect last month, 7 million catalog cards were in use. Approximately 1200 copies of reports had to be hand-processed every day, after security clearance of each request and checking against shelf stock. Currently, 55 percent of the material requested is out of stock and must be reproduced from microfilm.

The Current Automation Plan

The mere indexing and retrieval of information fully identified in the requests would be a mammoth operation. But in many instances no identifying data are given. Only automation could meet this challenge.

The Technical Information Agency has started off with a Remington-Rand USS-90 (Univac Solid State computer). This punch-card system has as its first objective a speed-up of the flow of business-type informational tools to military contractors. The system went into operation 15 February. Magnetic tapes will be added about 1 July to automatically identify reports requested without mention of ASTIA catalog numbers. Tapes will also accelerate checking for duplication, cumulative indexing of the *Technical Abstract Bulletin*, and information retrieval. Within another year, it is hoped, all catalog cards will have been copied on magnetic tape; this will make possible an automatic print-out, at 600 lines per minute, of bibliographies, together with a full descriptive abstract of each reference. The final step will be the installation of a *Randex* (random access) system, which will give greater flexibility in compiling reference information.

In the OTS report, the process by which a thesaurus of 900 "descriptors" was developed out of 70,000 subject headings is recounted, as the history of "Project MARS" (Machine Retrievel System). An interim single-word heading or "Uniterm" system was found to lack definition. Subject coverage was split into about 290 display schedules or basic categories in a pioneering venture.

The report (*Automation of Astia: A Preliminary Report*, Armed Forces Technical Information Agency, December 1959) may be ordered from OTS, U.S. Department of Commerce, Washington 25, D.C. It contains 56 pages; price, $1.25.

Science Foundation Surveys Scientists in Industry

American business firms employed about 780,000 scientists and engineers in January 1959, according to a National Science Foundation survey. About 35 percent of the total were engaged in engineering and scientific research and development activities. The survey was conducted for NSF by the Bureau of Labor Statistics of the U.S. Department of Labor.

Scientists and engineers in the sectors of industry studied represent approximately two-thirds of all those employed in the nation. The other third are in government agencies, educational institutions, and nonprofit organizations, or are self-employed.

Industries with the Most Scientists

Industries employing the largest groups of scientists and engineers in