nuclear power economically feasible through technological means. It then requests the Agency's Board of Governors and the Director General:

(a) to provide, on request, technical advice and guidance to Member States that are desirous of embarking on nuclear power programs, and to facilitate and arrange the direct participation of technicians and engineers of those countries in the design, construction and operation of nuclear power projects;

(b) to render, on request, such assistance as may be possible in the implementation of the nuclear power programs of such States;

(c) to consider the desirability of promoting the establishment of regional nuclear power projects on the basis of international collaboration between the technically advanced countries and the developing countries in the regions concerned, with a view to studying nuclear power costs under conditions prevailing in such regions;

(d) to undertake, on request, studies of the problems of the design, construction and operation of international demonstration nuclear power plants, and to consider the desirability of the establishment of such plants; and

(e) to report to the General Conference at its sixth regular session on the action taken in regard to the above matters.

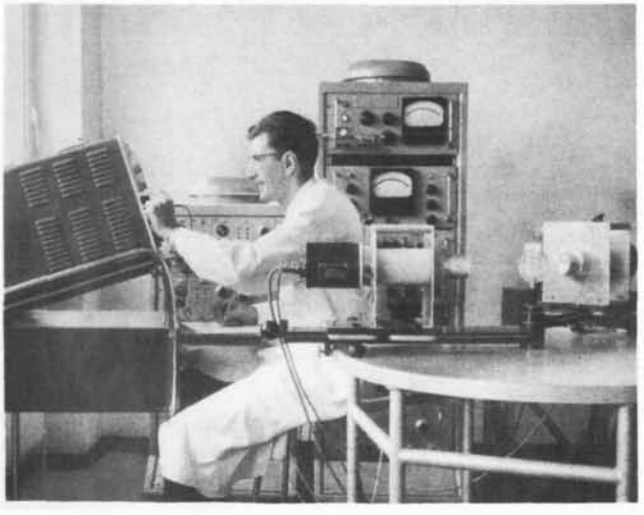
WORK BEGINS AT SEIBERSDORF LABORATORY

With the start of work at its laboratory at Seibersdorf, some thirty kilometers from Vienna, the International Atomic Energy Agency has entered upon a new phase in its development. Although some laboratory work had been carried out at the Agency's headquarters for quite some time, it was only with the completion of the facilities at Seibersdorf last autumn that the Agency could undertake its scientific research functions on an adequate scale. The establishment at Seibersdorf is the world's first full-fledged laboratory of a truly international character.

Although the laboratory is a rather modest one in comparison with national atomic energy establishments (especially in the advanced countries), it is in a unique position to carry out certain distinct tasks which call for comparison and co-ordination on the widest possible basis.

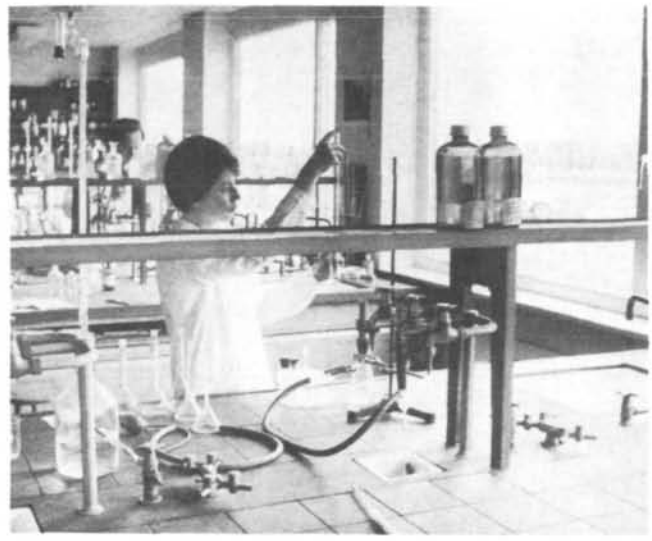
The nature of these tasks was outlined by the Agency's General Conference which, at its session in 1958, recommended that the scope of the laboratory should be limited to the following broad functions:

In the standardization section, Mr. Manuel Miguel, of France, one of the laboratory scientists, working with gamma-gamma coincidence apparatus



The recorder of an anti-coincidence counter being adjusted by Dr. O. Suschny, of Austria, head of the environmental radioactivity section

Dr. Sigvard Eklund (second from left), the Director General, on a visit to the laboratory. With him in the picture are Dr. Henry Seligman (second from right), Deputy Director General in charge of Research and Isotopes, Dr. Gerald B. Cook (extreme right), of the United Kingdom, head of the chemistry section, and Dr. E.A. Keroe (extreme left), of Austria, head of the electronics section



In the section for the measurement of environmental radioactivity, a radiochemical separation for strontium-90 being carried out by Miss Annedore Meeves (Federal Republic of Germany)

(a) metrology of radionuclides and preparation of radioactive standards,

(b) calibration and adaptation of measuring equipment,

(c) quality control of special materials for nuclear technology,

(d) measurements and analyses in connection with the Agency's safeguards and health and safety program, and

(e) services for Member States which can be undertaken with the facilities needed for the activities mentioned above.

It will thus be clear that the laboratory has been designed to fulfill three major objectives. In the first place, it will be a scientific center for the establishment of international standards in the field of atomic energy and will thus be of use to all Member States of the Agency. Secondly, it will help in developing procedures in connection with the Agency's regulatory

A tracer experiment being carried out at the laboratory

Professor Alexandre Sanielevici, of Romania, head of the metrology and standardization section, in his office at the laboratory

activities. And thirdly, the laboratory will be in a position to render some special services to those of its Member States which do not possess adequate research facilities of their own.

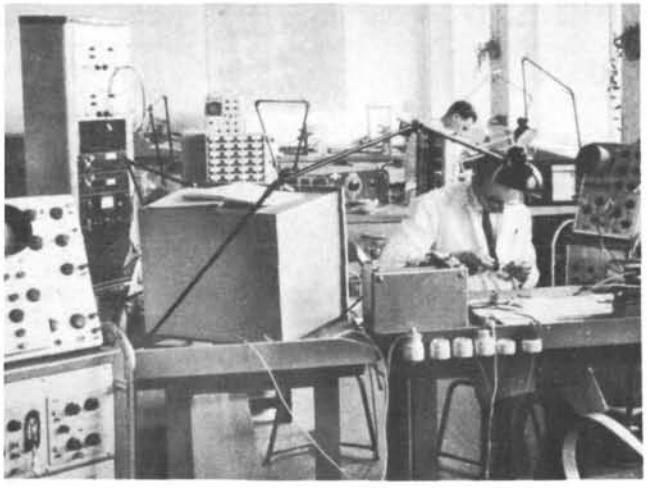
With the rapidly growing use of radioisotopes, standardization of radionuclides has become a task of the utmost importance, and a fairly comprehensive standardization program has already been started at the Agency's laboratory. In the main, the program consists of studies on methods for the absolute measurement of radionuclides which could be used as reference sources, participation in a number of inter-laboratory comparisons of radionuclides for the purpose of calibrating the reference sources, distribution of calibrated radionuclides (e. g. phosphorus-32, iodine-131 and strontium-90) to different laboratories for a comparison of the measurement methods used, and the design of a standardizing instrument to measure absorbed radiation doses. Various techniques have been developed in the laboratory for absolute measurements of radionuclides, including micro-calorimetric determination of radiation.

In January 1962 the laboratory at Seibersdorf will start a distribution service of calibrated samples of radionuclides to be used for testing and calibrating measuring instruments. The first distribution list includes 13 radioisotopes.

So far as radiation protection is concerned, an important function of the laboratory is the measurement of environmental radioactivity, which has a vital bearing on any program of radioactive waste disposal. Samples of air, water, soil and food are being analyzed in the laboratory for measurement of their radioactivity.

Preparations are being made for developing special methods for the non-destructive analysis of materials which will be of value in detecting any diversion of atomic materials to non-peaceful uses. While these analytical methods are designed primarily for the Agency's safeguard functions, it is expected that some of the analytical work done in the laboratory will also be useful in industrial processes.

The electronics section of the laboratory, where electronic equipment is checked, assembled and serviced and new apparatus developed



The analysis of samples for the measurement of environmental activity, which will help in formulating or adopting health and safety measures generally, is also being done to meet the special needs of some Member States. Approximately 300 food samples, received from various countries (Austria, the Federal Republic of Germany, Indonesia, Pakistan, the Philippines, Poland, Switzerland, Turkey and the United States), have already been analyzed. Eighty per cent of these have been milk samples, and 20 per cent other foods, such as vegetables, fruit, cereals, potatoes and meat. At the request of the Turkish Government, the Agency has carried out analyses of some 50 samples of soil and vegetation, originating from the site of the Istanbul reactor. At the request of the Austrian authorities, the laboratory is carrying out a continuing survey of the radioactive contamination of the most important foodstuffs in Austria, and two reports on this survey have already been transmitted to the Austrian Government and copies sent to the United Nations Scientific Committee on the Effects of Atomic Radiation.

A whole body counter is being set up to analyze contamination of human subjects with very small amounts of radioactivity. Plans are also being made for a bio-assay service for Member States, under which radiochemical analyses of specimens of human excreta or other biological material will be carried out in order to assess the level of internal radioactive contamination.

Apart from the analyses and measurements conducted at the IAEA laboratory at the request of Member States, the laboratory provides facilities for the training of a limited number of scientists from interested Member States. The General Conference, at its last session, adopted a resolution urging that the facilities of the laboratory be made available and its work organized in such a way "that as many scientists as possible from the developing areas can receive training, to the extent practicable, in the various fields in which the laboratory is operating".

Professor Carlo Salvetti, Director of the Agency's Division of Research and Laboratories