Vienna, August 1959), and the measurement of radioisotopes (Vienna, October 1959).

The agency's first scientific and technical publications appeared in 1959 and included world directories of power reactors and radioisotopes.

Research Programs Advance

The ground for the agency's functional laboratory near Vienna was broken during the third regular session of the conference in September. Work on the standardization of radioisotopes and radiochemical analysis of food samples (milk) from various countries continue in the provisional laboratory at headquarters.

As of 31 August, 22 research contracts had been awarded by the agency. They deal with health and safety, waste disposal, and safeguards problems, and also with the production and utilization of isotopes.

Soviet-U.S. Cooperation Pledged

The preface of the report also draws attention to the announcement, made in September, that the U.S.S.R. and the United States have agreed to use the agency as the means of making available to interested nations all useful information developed by the two countries on the peaceful uses of atomic energy.

In restating the agency's main objectives, the report drafted by the Board of Governors and approved by the General Conference states: "In the broadest terms, the production of radioisotopes and their use in industry, agriculture, medicine and research, and the eventual production of economic nuclear power, under safe and secure conditions, continue to be the main objectives of most of the Agency's work. For the attainment of these aims the Agency is now employing a variety of means, including technical assistance, the diffusion of information, the formulation of regulations and recommendations, the supply of nuclear fuels, the promotion of research reactor development, the elaboration of safeguards, the organization of training courses, the award of fellowships and of research contracts."

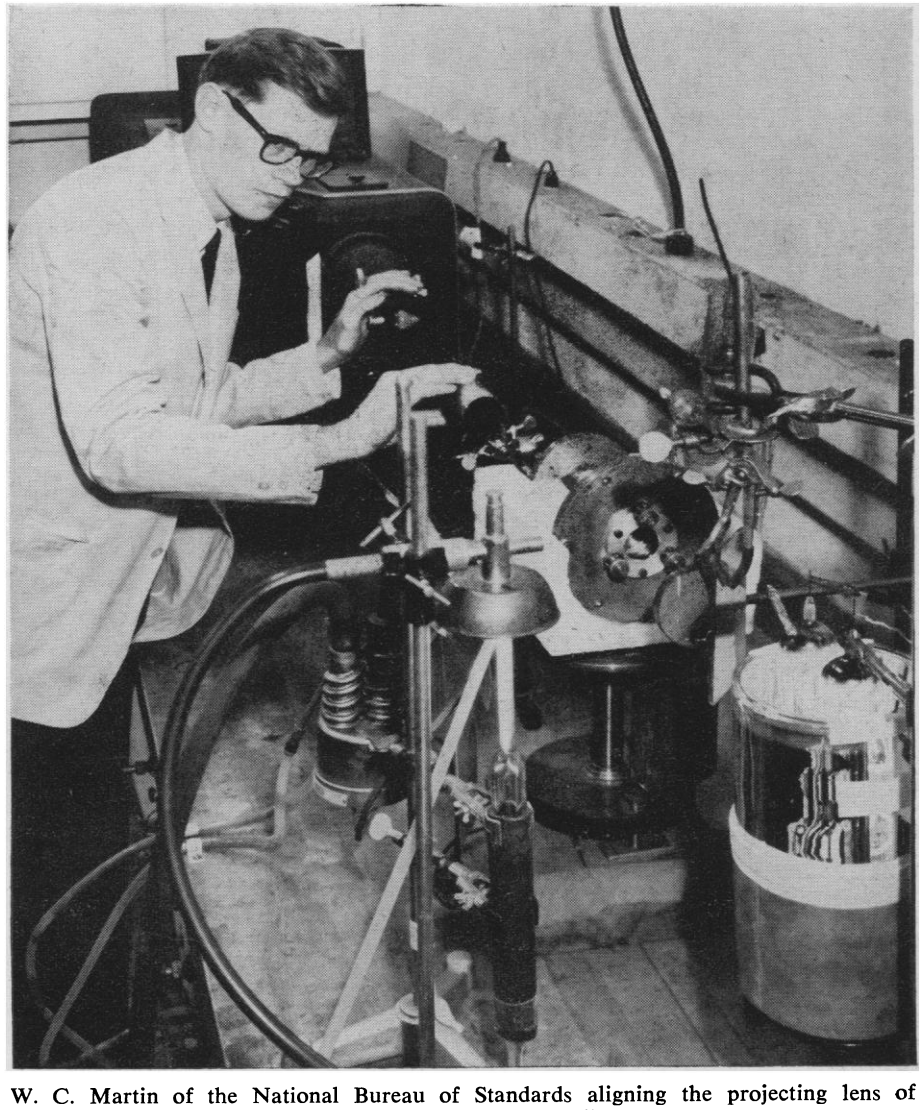
IAEA membership has risen to 70. The agency works in relationship with the United Nations under a special agreement, and it participates in the Expanded Program of Technical Assistance of the U.N. and related agencies

Confirmation of the Rydberg Constant

The accepted value for an important atomic constant, the Rydberg constant, has recently been substantiated by the National Bureau of Standards. This confirmation resulted from an examination of earlier work which gave a value in conflict with the Rydberg constant in use today. After re-evaluating the basis for this determination, W. C. Martin of the bureau staff recalculated the constant and obtained excellent agreement with the accepted value.

In the picture shown here, Martin is aligning the projecting lens of a system used in measurements to re-evaluate the Rydberg constant. The work involves measuring the wavelength of the 5016-A helium line against a mercury standard. Light from a liquid-nitrogen-cooled helium lamp, immersed in Dewar (lower right), equipped with windows, passes through a partially transmitting mirror into the interferometer along with light from the mercury-198 lamp (lower center), which is reflected into the interferometer by the same mirror. The resulting fringes are then projected onto the slit of a large prism spectrograph (upper left). A comparison of the helium fringes thus obtained with the fringes due to mercury lines of known wavelength allows a very accurate determination of the wavelength of the particular helium line involved in calculating the Rydberg constant.

This evaluation was carried out as part of a broader program which seeks to obtain more accurate values for important physical constants, such as velocity of light, acceleration of gravity, and various atomic constants.



W. C. Martin of the National Bureau of Standards aligning the projecting lens of a system used in measurements to re-evaluate the Rydberg constant.