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**Nuclear Materials Management.** Proceedings of Symposium, August 20 - September 3, 1965, Vienna, International Atomic Energy Agency (1966). 878 pp. \$18.00.

The management of radioactive materials used as a source of energy for peaceful application in power generation and research has acquired added significance with increased usage and distribution of these materials. Strict control is required not only because of financial motivation, but also as a means of safeguarding humanity from the devastation and suffering that could emanate from the indiscriminate and unauthorized use of such materials. The time appeared appropriate to exchange the vast store of knowledge and experience which has been amassed under various conditions and disciplines involved in nuclear material control. This Symposium served that purpose.

*Nuclear Materials Management* - Proceedings of the Symposium held by the IAEA at Vienna, August 30 - September 3, 1965, and published by the IAEA in 1966, provides a composite of domestic and international methods and techniques for achieving accurate and effective control over nuclear materials possessing high intrinsic and strategic importance. The subject matter, contained in 58 papers presented at the Symposium, is predominantly by US authors, but includes authors from nine other countries. The papers have been presented in their entirety with minor editing and have retained the essential expressions and style of each author. They have been compiled according to suitable and related categories corresponding to the format of the sessions, i.e., Material Control Systems; Recording, Reporting and Generation of Quantitative Data; Evaluation of Measurement Methods and Nuclear Safety and Criticality Control; Economic Considerations and Government Activities; Chemical and Isotopic Analysis; Burn-up and Production. Each paper is printed in the language of the author with an abstract in English, French, Russian, and Spanish, as applicable, with additional enlightening discussions through question-and-answer sessions which followed most presentations. The majority of papers are profusely illustrated with drawings, schematic diagrams, and, where applicable, documentary forms such as transfer receipt and shipment, internal process flow,

inventory, laboratory data, and other forms that represent what can be described as typical documentary requirements for adequate control. Equally important, many of the papers provide added reality in describing accountability control by inserting reproductions of actual processing data recorded during apparent routine operating conditions. Many papers contain a listing of pertinent reference materials which offer the reader an opportunity of delving more fully into a particular facet of interest.

The papers represent the culmination of many years of experience in arriving at the most proficient techniques of handling nuclear materials and maintaining a systematic approach toward accounting for these materials and determining the reliability of supporting data by evaluations using statistical methods. The lay individual with only general industrial or professional experience will find the rationale and background material contained in the introductory remarks of each paper of sufficient latitude and concise depth to permit understanding and appreciation of the problems facing industry and government in protecting and controlling nuclear materials. The papers show how the experience obtained in the control of large-quantity, lower-value materials, as well as those of high intrinsic and monetary value, has been adapted to nuclear materials possessing not only these qualities but also radioactive properties requiring remote-handling devices and other special techniques. Those familiar with material control and particularly those specializing in certain portions of the industrial processing complex which extends from mining raw ore through fuel fabrication, reactor irradiation, and reprocessing recovery will find the details appealing, since the interaction of many techniques of accounting and measurement are applicable over a broad area of interest.

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May 10, 1967

*About the Reviewer: Nicholas Ovuka, a member of the Division of Nuclear Materials Management at Headquarters, US Atomic Energy Commission, is continuing a career in nuclear matters dating back to Manhattan District days with early service at Oak Ridge, Hanford, and Savannah River. Mr. Ovuka received his academic training, both undergraduate and graduate, in chemical engineering, at the University of Pittsburgh and has held responsible positions in nuclear fuel fabrication, chemical reprocessing, and materials control with both the government and private industry.*