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Advances in the Collection and Analysis of Large Volumes of Information on the Nuclear Fuel Cycle from Disparate Sources as a Verification Tool

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The Department of Safeguards seeks to provide the international community with credible assurances that States are fulfilling their Safeguards obligations in that all nuclear materials remains in peaceful use and that there are no undeclared nuclear activities. To this end declarations by States to the Agency are verified for correctness and completeness. This verification process involves the collection of Safeguards relevant information from a wide and disparate range of sources, independent from the States' declarations.

In the years since the last Safeguards Symposium, the Department of Safeguards further developed its sources to obtain a reliable, broad coverage of all aspects of the nuclear fuel cycle, as well as methodologies to query and collate this information. In addition, analytical techniques have been developed, supported by implementation of a new analytical platform that can handle the vast amount of information and data now available.

This enables the IAEA to map information collected on all aspects of the nuclear fuel cycle in any State to the Physical Model, the internal Agency standard technological reference, combining diverse, disparate and multiple sources into one analytical model in a reliable way.

In this paper the authors will describe the types of data sources used, methodologies of collection and analysis and how information is collated. The authors will also describe the environment used for such work and the information analysis platform that is being established. They will briefly touch on the use of this work in relation to the State level-concept, the analytical framework that is in use in the Department. The paper will illustrate the work performed through an example.

Country or International Organization

International Atomic Energy Agency, Department of Safeguards

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