RADIOCHEMICAL COMPARISON BETWEEN THE DOSIMETRY REGISTRY OF THE MAYAK INDUSTRIAL ASSOCIATION (DRMIA) AND THE UNITED STATES TRANSURANIUM AND URANIUM REGISTRIES(USTUR)

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In 1994, the Joint Coordinating Committee for Radiation Effects Research (JCCRER) was established by agreement between the United States and Russian Federation governments. Under the auspices of the JCCRER, a long-time collaborative research program, "Metabolism and Dosimetry of Plutonium Industrial Compounds", was organized between the DRMIA and USTUR.

The first year of the project initiated an intercomparison study of the radiochemical separation and measurement methods used for plutonium determination in human tissues by the two registries. Radiochemical separation methods varied, but the largest differences were in the alpha particle measurement techniques utilized by the two laboratories. There are also differences in the types of tissues collected at autopsy and analyzed by each laboratory. Interestingly, it was found that DRMIA has approximately 1000 cases(of 1500 total) with body burdens > 1500 Bq, while USTUR has approximately 350 cases with body burdens generally <500 Bq with a few exceptions. Both laboratories will benefit from the exchange of plutonium distribution data from individuals with very low and very high documented exposures. In addition, the intercomparison of radiochemical methods via the exchange of tissue samples and the analysis of NIST Standard Reference Materials by the DRMIA will improve validation procedures..

This year, DRMIA and USTUR have completed their first exchange of samples for intercomparison of our plutonium isotope techniques. This data will be discussed along with future plans for further exchanges.