A Comparison or Pre- and Post-Cerro Grande Fire Results for Thermal Ionization Mass Spectrometry (TIMS) Bioassay Analyses

Robert E. Steiner, Clarence J. Duffy, Deward W. Efurd, Kimberly Israel, Peter Lindahl, Fred Roensch, and Sandra E. Wagner, Los Alamos National Laboratory, Chemistry Division, Los Alamos, NM 87545

Los Alamos National Laboratory (LANL) has established a *in vitro* bioassay monitoring program in compliance with the requirements in the Code of Federal Regulations, 10 CFR 835, *Occupational Radiation Protection*. One aspect of this program involves monitoring plutonium levels in at-risk workers. High-risk workers are monitored using the ultra-sensitive TIMS technique to ensure compliance with DOE standards.

Unfortunately the LANL bioassay program was severely impacted by catastrophic Cerro Grande fire that occurred in May, 2000. The clean chemistry and mass spectrometry facility where this work is performed received considerable smoke damage and had to be essentially cleaned and rebuild. This refurbishment was a considerable undertaking in both fiscally and temporally. The question of, "How well will the cleanup and reconstruction really work" was continually raised throughout this process. This presentation will discuss some of the rigor associated with the reconstruction process but will mainly focus on a comparison of data collected before and after the Cerro Grande fire and the conclusions that were drawn from this study.