



Poster 3.1 Indoor exposure

Abstract P3.1-10

ELEMENTAL MERCURY RELEASES ASSOCIATED WITH THE REMOVAL OF GAS PRESSURE REGULATORS IN HOMES

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Gas pressure regulators containing about 3 to 10 milliliters of elemental mercury were installed, primarily in basements, in many homes prior to the mid-1960s. Over the last 40 years, these "old style" regulators were moved outdoors or replaced with a new regulator, sometimes resulting in accidental mercury releases in a small fraction of homes. Such releases sometimes produced elevated concentrations of elemental mercury vapors in various indoor locations, particularly in air immediately above the surface where the spill occurred. We discuss the two-phase investigation initiated by Michigan Consolidated Gas Company to characterize airborne mercury concentrations in residences where a gas pressure regulator had previously been removed. In Phase I, about 4,500 air samples were collected in 32 houses where a known prior release and cleanup of mercury occurred. In Phase II, about 3,800 out of 15,000 homes where a regulator may have been removed were sampled based on a statistically based sampling protocol. Results from Phase I indicated that average breathing zone concentrations in the living space were less than the Agency for Toxic Substances and Disease Registry (ATSDR) residential action level of $1 \mu\text{g}/\text{m}^3$. In Phase II, initial measurements indicated that a spill may have occurred in 26 homes. More detailed sampling showed that average breathing zone concentrations in the living space were less than the recommended action level in all but three of these homes. Based on these results, which are similar to those obtained in a study conducted in Chicago last year by another utility company, it can be inferred that some mercury was spilled in about 0.7% of homes in which regulators were removed, and that the cleanups undertaken at the time of the spill were adequate to keep airborne concentrations generally well below $1 \mu\text{g}/\text{m}^3$ in these homes.