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New alarm over hydrogen sulfide

Researchers document lasting damage to human nervous system

By JIM MORRIS

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INDIANAPOLIS -- Exposure to hydrogen sulfide, even in extremely low concentrations, can cause lasting damage to the nervous system, according to research presented here Wednesday, Nov. 12.

Members of a panel at the American Public Health Association's annual meeting discussed study results that challenge the conventional wisdom on the chemical, a highly toxic byproduct of oil and natural gas extraction and refining, as well as other industries. The thinking has been that if an exposure to hydrogen sulfide (H₂S) isn't fatal, there are few, if any, lasting effects.

But in his presentation Wednesday, Dr. Kaye Kilburn, of the University of Southern California School of Medicine, said unequivocally that "H₂S poisons the brain, and the poisoning is irreversible."

In recent years, Kilburn has studied workers subjected to relatively high doses of the chemical and residents of two California refinery communities -- San Luis Obispo and the Wilmington neighborhood of Los Angeles. Kilburn's subjects underwent extensive neurological testing and showed pronounced deficits in balance, reaction time and other characteristics tested. They also complained of recurring ailments such as dizziness, insomnia and overpowering fatigue.

Three Texas researchers who have just completed their analysis of data collected near a geothermal power plant in Hawaii reported similar findings.

Dr. Marvin Legator and Chantele Singleton, of the University of Texas Medical Branch in Galveston, administered a detailed "symptom survey" to 97 people who live within four miles of the Puna Geothermal Venture. PGV produces electricity from subsurface volcanic heat and gives off hydrogen sulfide in the process.

Eighty-eight percent of the subjects said they had experienced central nervous system impairment of the sort described by Kilburn.

Only 26 percent of those in a control group -- people who live some 20 miles from the plant -- reported such problems.

Dr. Bob Borda, a neuropsychologist in Stafford, put neighbors of the plant through a battery of tests and found that many demonstrated attention deficits and an inability to process information quickly. The condition, Borda said, is analogous to an outdated computer