# COLORADO'S WINNABLE BATTLES ELEVATING HEALTH AND ENVIRONMENT

# **Clean Air – Mercury Emissions Reduction**

Mercury is a naturally occurring metal and a potent neurotoxin. Recent studies suggest that 50 percent to 70 percent of all mercury in the global environment is a result of human activity. Coalfired power plants are the primary source of mercury air emissions in the United States. Once in the air, mercury is carried by prevailing winds and eventually settles onto land or into rivers, lakes and oceans. Mercury persists in the environment, meaning it does not break down or go away.

# Why is this important?

Mercury interferes with the way our nerve cells function. Mercury exposure can decrease the ability to perform basic functions such as seeing, hearing, talking and walking. It can cause personality changes, depression, irritability, nervousness and the inability to concentrate. Significant exposures can damage the brain, central nervous system, kidneys and lungs.

Human exposure to mercury most commonly occurs through eating contaminated fish. Mercury deposited into waterways is converted by bacteria into methylmercury, which builds up in the tissue of fish.

#### Where are we?



The Colorado Department of Public Health and Environment manages a mercury prevention and reduction campaign to inform citizens, businesses and the medical industry about the serious health issues associated with mercury exposure. The Mercury-free Colorado Campaign has undertaken efforts to increase the recycling of compact fluorescent lighting, mercury-containing thermostats and automotive mercury switches.

Litigation and other factors have delayed regulation of mercury emissions at the federal level. Accordingly, the department has worked proactively with a broad range of

stakeholders, including industry and environmental organizations, to create state rules designed to quantify and reduce mercury emissions in Colorado.

The Colorado Air Quality Control Commission adopted a rule that requires the largest power plants to monitor mercury emissions to help determine how much mercury is being released into the environment through the air.

Nine electrical generating units at seven power plants are required to use continuous emission monitors to measure mercury emissions.

The state of Colorado also conducts an ongoing study of the presence of contaminants such as mercury in fish that may be consumed by the population. Currently, 24 Colorado waterbodies have required fish consumption advisories for mercury. (Every state in the country has issued such advisories for various waterbodies.)

#### Where do we want to be?

Colorado had adopted rules that will phase in mercury control requirements for electrical generating units beginning in 2012. Control requirements will become more stringent over time and lead to dramatic decreases in mercury emissions from Colorado's largest sources.

Xcel Energy's Pawnee Station and the Platte River Power Authority's Rawhide Station must capture mercury at an 80 percent rate in 2012, increasing to 90 percent in 2018.

Additionally, new and modified electrical generating units and power plants will become subject to mercury emission standards and related monitoring, recordkeeping and reporting requirements upon startup. The ultimate goal is to reduce mercury emissions from the largest sources by 90 percent or more by 2018.

### What is being done?

All of Colorado's largest power plants are or will be required to measure and reduce their mercury emissions.

Xcel Energy's Comanche Station, Lamar Light and Power, and Tri-State Generation and Transmission Association's Craig Station must capture mercury at rates based upon pounds of mercury per gigawatt hour (lbs/GWh).

Future new or reconstructed electrical generating units must meet an annual 90 percent mercury capture target, with a 95 percent mercury capture goal.

Vigorous and consistent inspections of mercury emission sources in Colorado will occur to ensure compliance with the rules and progress toward future benchmarks.

# **High-risk groups**



The persistent nature of mercury threatens all residents.

Women who are pregnant or may become pregnant, nursing mothers and young children are the most susceptible. Fetuses and young children are at the greatest risk because their nervous systems are still developing.

Certain individuals who eat fish frequently are at greater risk. Fish consumption advisories are based on the amount and type of fish consumed in a meal. For these advisories, a meal size is eight (8) ounces of fish for an adult and four (4) ounces for children. The

recommended frequency of consumption varies depending upon the waterbody.

## **Underlying causes**

There are other ways in which people can be exposed to mercury beyond emissions from power plants and industrial facilities. Mercury vapors may be inhaled when fluorescent lamps, gas regulators or even traditional home thermometers are broken. Proper education about mercury, along with regular opportunities to properly recycle mercury-containing items, is a key to preventing a number of individual exposures.