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Submitted for the record by Suwanee - St. John's Sierra Club 1/24/05 by Linda Pallini, Chairman

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We all use electricity in our daily lives, almost without thinking about it -- turning on the lights, listening to the radio, and using computers. If we stopped and learned about the energy we use, we would encounter some shocking realities about the impacts of the energy production process on the environment and our health.

Out of the entire electric industry, coal-fired power plants contribute 96% of sulfur dioxide emissions, 93% of nitrogen oxide emissions, 88% of carbon dioxide emissions, and 99% of mercury emissions

The burning of coal emits sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) gases, which can form fine particles, or soot, when they react with the atmosphere. In addition, coal-fired power plants also emit soot directly from their smokestacks. Scientists increasingly believe soot to be the most dangerous air pollutant, blaming it for 64,000 deaths per year in the US, which is almost twice the number of deaths due to auto crashes. Cutting power plant pollutants by 75% would avoid more than 18,000 of those deaths.

Soot causes bacterial and viral respiratory infections like pneumonia, as well as chronic lung diseases, like asthma, that destroy lives over the course of years. Soot from power plants triggers an estimated 603,000 asthma attacks nationwide every year. In addition, studies have found that soot may cause heart attacks and arrhythmia (irregular heartbeat) and that the incidence of strokes and heart failure is greater in areas with high levels of soot.

## Toxins

Power plants are one of the largest sources of toxic metal compound pollution. Together they released more than one billion pounds of toxic pollution in 1998, including 9 million pounds of toxic metals and metal compounds and 750 million pounds of dangerous acid gases. Many of these compounds are known or suspected carcinogens and neurotoxins and can cause acute respiratory problems, and aggravate asthma and emphysema.

One of the most dangerous toxins emitted is mercury. Coal contains trace amounts of mercury that are released into the air when the fuel is burned to produce electricity. The health hazard results when mercury falls to the earth with rain and in dry particles.

Mercury is a serious toxin, and accidental high-level exposure can result in severe nervous system damage, even death. But exposure to toxic mercury primarily affects fetal development. In unborn children, it can influence the development of the brain and nervous system. When infants are exposed to toxic mercury by their mothers through breast milk, the result can be extremely dangerous and can cause delays in walking, talking, and fine motor skills. The primary exposure pathway for most Americans is through consumption of fish with high levels of methyl mercury, the toxic form of mercury that accumulates in fish and shellfish and the animals that eat those fish, including humans. More than 70% of the fish advisories issued in 2002 were for mercury contamination.

**By the Government:**

The government should expand the Clean Air Act to include protections from old and dirty power plants and provide incentives for the use of cleaner fuels. The government should also work towards the replacement of the existing infrastructure with a more sustainable means of producing electricity.