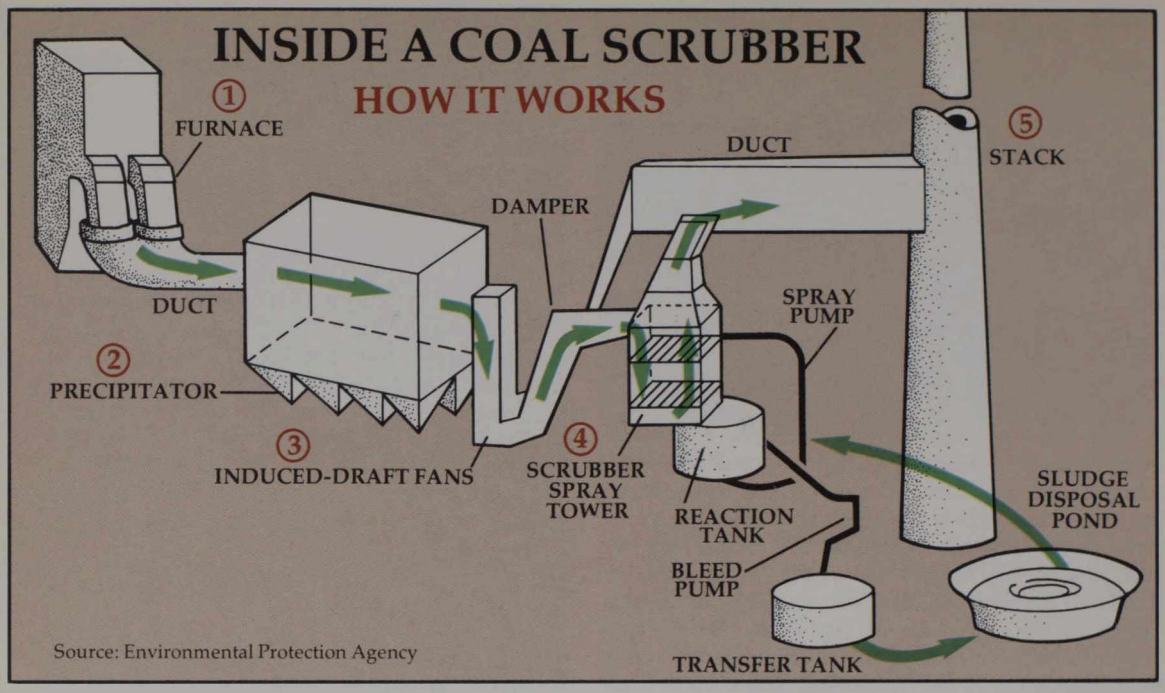

Coal is burned in furnace or boiler (1). Fans (3) pull resultant gases through precipitator (2) where fly ash is removed. Damper directs gases to scrubber spray tower (4) where slurry of water and chemicals is sprayed to remove SO_2 and remaining ash. Clean gases then go up stack (5). Liquid chemical used to absorb SO_2 drains into reaction tank where sulphur is removed through a chemical process. Bleed pump routes it to transfer tank from which it drains to sludge disposal pond.

The Japanese Example

In the late 1960s Japan had the most severe sulphur pollution problem in the world.

The health of Japan's people was being directly affected: residents of Yokohama and other power-generating centres were forced to wear gauze face masks when out in the street.

In 1967 the Japanese government issued its first control standards which limited the number of polluting particles. For control purposes the country was divided into seventeen areas, and specific levels for SO_2 emissions were set for each source.

Between 1970 and 1975 Japan's SO_2 level was reduced by fifty per cent while its level of energy consumption was increasing by one hundred and twenty per cent. In 1973 new goals were set, and the emissions limits have been revised downward almost yearly. New stringent nitrogen oxide emission limits have also been put into effect.

Most large plants have met the requirements by installing chemical scrubbers called Flue Gas Desulfurization systems. These remove over ninety-five per cent of the sulphur from the stacks. The number of scrubbers in use grew from fewer than one hundred in 1970 to over one thousand by 1975.

U.S. and Canadian Research

The Canadian government plans to spend (Cdn) $41 million on acid rain projects over the next four years, and provincial agencies also have extensive research and monitoring programs.

The United States Environmental Protection Agency will have spent $8.64 million during fiscal 1981 on projects concerned specifically with acid rain research. In addition, EPA and other U.S. agencies such as the Departments of Commerce, Agriculture and Energy have many additional projects related to the problem.

Below are a few of the studies being conducted in the two countries by a variety of governmental sponsors.

– The Canadian Forestry Service in the Department of the Environment is studying the impact of acid rain on a pulpwood forest near Quebec City.

– The Canadian Wildlife Service, Parks Canada and the Canadian Forestry Service (as well as other parts of the Department of the Environment) are conducting a study in Nova Scotia's Kejimkujik National Park of the impact of acid rain on the ecosystem near the headwaters of the Tusket, Mersey and Medway Rivers. These rivers are all downwind from industrial centres in the