

Tomorrow's Scrubbers: Lower Cost and More Effective

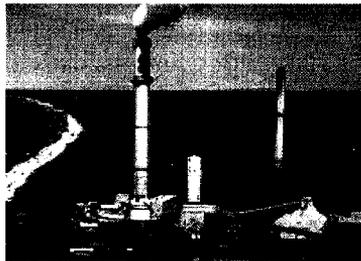
The first utility in the United States to reduce emissions in compliance with new Clean Air Act standards for sulfur dioxide did so using advanced technology from the DOE Clean Coal Technology Program.

Northern Indiana Public Service Corp. installed the Pure Air scrubber, owned and operated by a joint venture involving Air Products and Chemicals Inc., at its Bailly Station near Gary, Indiana. Because of several design innovations, the Pure Air scrubber cost only half as much as earlier units. Also, instead of the waste sludge commonly produced by older scrubbers (which causes landfill problems), it produces a commercially marketable gypsum material. The Pure Air scrubber is eliminating 50,000 tons of SO₂ emissions each year, turning an air pollutant into enough wallboard to construct nearly 19,000 homes. The project earned *Power* magazine's 1993 *Power Plant of the Year* award.

Air Products and Chemicals is working with Florida Power and Light (FP&L) to obtain approval to replicate the scrubber on a 1600-MWe station (twin 800-MWe units). The units currently burn fuel oil and FP&L wants to switch to a low cost fuel known as Orimulsion. With the advanced scrubber, the company can burn Orimulsion and meet air quality standards. Burning the lower cost fuel could save utility ratepayers approximately \$2.5 billion over the next 20 years.

Another flue gas scrubber to be commercialized under the Clean Coal Program is the CT-121 Flue Gas Desulfurization System. This system, demonstrated by Southern Company Services at a Georgia Power Station near Atlanta, proved that large vessels needed for scrubbers could be built out of low cost fiberglass and operate reliably over a wide range of conditions. The system consistently removed over 93 percent of the sulfur in the flue gas from high-sulfur coal combustion. The system also removed 99 percent of the particulate matter in the flue gas.

Southern Company Services, in association with Fluor and Chiyoda (the technology owner) is currently building at CT-121 scrubber at a tar sands oil extraction facility in Murray, Alberta Canada. Sized at the equivalent of a 350-MWe power system, the scrubber has an estimated value of \$75 million with a U.S. employment impact of 260 job-years.



Equipped with the Pure Air advanced desulfurization unit, the Bailly Station on the shores of Lake Michigan is now removing more than 95 percent of the sulfur pollutants from its coal combustion flue gas.

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