In 1972, American Cast Iron Pipe Company, or ACIPCO, long a leader in the manufacture of cast iron pipe, installed a 150-inch-diameter cupola, at that time the largest of its kind in the world. This piece of equipment replaced twelve smaller cupolas, and represented the culmination of over forty-two months of planning, design, and construction.

The cupola stands seventy-two feet high. The fact that the cupola was larger than any earlier installation in itself presented unusual challenges in structural design, cooling, and blast air distribution. The cupola is a monument to the engineering skills of Modern Equipment Company (Port Washington, Wisconsin) and to the equipment suppliers, but perhaps chiefly to the perception and hard work of the ACIPCO engineering, construction, manufacturing, and electrical forces who coordinated and installed the six-million-dollar project. Housed in a specially designed, twelve-story building, this cupola can produce more than one hundred tons of melted iron per hour, providing hot metal for all of ACIPCO’s iron-casting needs.

More importantly, the cupola designers equipped it with air pollution control devices capable of removing ninety-nine percent of the particulate matter from exhaust gases. In practical terms, this advance meant that the nearly twenty-four tons of particulate matter generated in the iron-melting process in any given day were no longer released into the air over Birmingham—truly an environmental breakthrough. Although the cupola air emissions are cleaned of nearly all particulate matter by this system, combustible gases, primarily carbon monoxide, remain in concentrations sufficient to support combustion with a heat content of up to 120 million BTU’s per hour.

Governor George C. Wallace presented to ACIPCO the initial Governor’s Award recognizing “its pioneering work in air pollution control in advance of passage of effective legislation.” The city of Birmingham recognized the cupola installation in 1974 with the city’s Environmental Improvement Award.

In 1980, a $3 million carbon monoxide burner and recuperative heat system were added to the melting facility. In this uniquely designed vertical burner and combustion chamber, the waste gases containing carbon monoxide are mixed with air and burned as the primary fuel, cleaning the emissions to a 99.5% level and eliminating all of the carbon monoxide. More than 2,500 homes could be heated with the natural gas conserved with this equipment.

Although other firms have now installed cupolas of equal size, in 1972 this ACIPCO project was truly a pioneering effort. With its visionary design and unique efficiency, this project contributed significantly to the character of future engineering projects. As an editorial broadcast in the Birmingham area at the time put it, “Thank you from the top of our lungs.”