U.S. Steel’s Seamless Pipe Mill in Fairfield, Alabama, began operation in December 1983, with the goal of producing a quality product for the world market. The mill is a state-of-the-art facility equipped with the latest technology available, and as a result, it produces the highest quality seamless pipe known today. It is designed to produce 545,000 tons of product per year, ranging from casting, to tubing, to line or standard pipe, in a variety of lengths and diameters.

The mill, designed by RUST International Corporation, was automated to provide the quality control required to meet the high standards set for these tubular products, and to provide maximum throughput by controlling product movement. Four main areas of economic return guided the automation plan: productivity or processing efficiency; yield improvements; improved product performance and order control; and ancillary economics, or the return on investment associated with improvements in performance attributable to automation.

The automation of the mill has resulted in several such improvements, including a tracking system that provides a vehicle for identification of mill operational improvements, such as adaptation of mill setups and definition and elimination of product flow “bottlenecks”; better location of imperfections in products during production; a computer tracking function that helps to assure that each pipe produced meets desired specifications; and on-line information about the number of cycles performed by each tool, information that allows for planned tool replacement, reducing down time and improving the quality of the product.

The seamless pipe, coupled with the bloom caster, represents an investment in high-tech tubular production capability which makes it a world-class supplier of high-quality seamless pipe. Products include oil country tubing, casing, standard and line pipe, primarily for the energy industry.

At the pipe mill, blooms are tested and surface defects are removed before they are conveyed to the reheat furnace prior to processing in the hot mill. There, the square blooms are pierced internally and pressed from the outside to produce tube shells. Tubes may be processed through as many as 24 roll stands, depending on the diameter needed. At the end of the hot mill, the tubes are moved onto a cooling bed, then cut to desired length. The semi-finished tubular products are then heat-treated, if necessary, to achieve metallurgical standards, and then finished, inspected and shipped.

Throughout the entire process, a computer network monitors metallurgical and dimensional characteristics to insure quality and to control the manufacturing process itself.

The Fairfield Seamless Pipe Mill is a major contributor to the economic wellbeing of the industrialized portion of Alabama, and is leading the resurgence of steel making as a major industry in Alabama.