CLEWISTON - The heavy odor of molasses hangs over the glistening modern sugar refinery and the aging processing mill that traditionally signified the sweet smell of success for United States Sugar Corp.

Now to survive tough global competition, the country's largest sugar cane producer must slash jobs and spend millions on a new processing mill.

The company's struggle may leave a bitter aftertaste for U.S. Sugar and "America's Sweetest Town" -- as the sign reads at the entrance to Clewiston -- but executives insist that unless U.S. Sugar becomes more competitive, there won't be a future.

The nearly 75-year-old company, which was founded by automotive pioneer Charles Stewart Mott, plans to spend more than $100 million to build a state-of-the-art processing mill that will replace 1960s-era facilities in Clewiston and the nearby Bryant mill.

By 2007 -- when the new automated mill is scheduled to start crushing cane -- the workforce from the two existing mills will be cut in half, dropping from 576 workers to 226.

Over the past several years, U.S. Sugar has faced a number of challenges, starting with low sugar prices in 1999 and 2000 that resulted from a production glut.

"That was a wake-up call," said Judy C. Sanchez, director of corporate communications at U.S. Sugar. "That's when we started our drive to bring costs down." Last year, U.S. Sugar laid off 30 percent of its administrative staff as part of the cost-cutting effort that top executives believe is imperative.

Owned by its employees and the controlling charities, the Mott Foundation and the Mott Children's Center, the company does not release financial results. But each year, U.S. Sugar produces 1.4 billion pounds of sugar and 120 million gallons of orange juice, processed by its wholly owned subsidiary, Southern Gardens Citrus.

Big Sugar is facing pressure on various fronts: Sugar processors and environmental groups have tangled for years over cleanup of the Everglades, real estate development is coming closer -- especially in Palm Beach County, and global free trade has meant Third World countries are increasing their demands that developed nations open their markets by eliminating subsidies, price supports and tariffs. The trend could upset the U.S. sugar quota program.

Now opposition to the Central American Free Trade Agreement has risen to the top of the sugar industry's legislative agenda. Beet and cane sugar producers have joined the textile industry, labor, environmental and consumer advocacy groups that are also trying to block U.S. Congressional approval of the agreement.

The pact known as CAFTA would bring the Dominican Republic and five Central American
nations into a free trade arrangement that American sugar growers and processors oppose because all the CAFTA countries would be able to boost their sugar exports by 122,000 tons annually in the first year. By year 15, they would be able to export as much as 170,000 tons of sugar to the United States.

"We have always said that bilateral and regional trade agreements are death by a thousand cuts," said Robert Coker, U.S. Sugar's senior vice president, public affairs.

Meanwhile, the sugar industry itself has changed.

Gone are the cane cutters who chopped sugar cane with machetes, replaced by huge harvesters that grab and slice the towering cane, spewing the stalks into trucks while hundreds of egrets and herons wait patiently for the machinery to churn up plant life and send insects flying.

Like the cane fields, U.S. Sugar's seven-year-old sugar refinery can now be run by a handful of operators. These highly skilled employees monitor computers, check the sugar at various stages of the process and handle maintenance and repairs.

The new processing mill U.S. Sugar is building will also be heavy on technology and light on staff.

"We can never match the wages in developing countries," said Robert Buker, the company's executive vice president. "We have to find ways to do things with a lot less people. Anything we have that takes people, we are looking at automation."

FOCUS ON NEW MILL

But for the moment, the company is more focused on just getting its new mill built.

It's challenging because it must be constructed as the old processing mill is dismantled.

During the transition period, the company needs to make sure it has an adequate workforce. In February, it reached an agreement with the union that, among other things, establishes pay incentives for employees who stay for the three years until the Bryant mill is closed and their jobs are eliminated.

TOP TECHNOLOGY

U.S. Sugar has shopped all over the world for top technology for its mill and has bought equipment and software not only from the United States but also Brazil, Germany, France and Britain. It also assembled a multinational team to design and build the new processing mill that crushes the cane, and then heats, clarifies and crystallizes sucrose from the liquid.

"We have brought together a real nice mosaic of experience on our team," said William A. Raiola, senior vice president of the sugar processing department. "Our plan here is to consolidate our two individual operations in one center bringing technology up to 21st century standards."

Like the old facility, the new one will generate its own energy by using the fiber of the crushed cane to produce steam and electricity. Molasses, a byproduct of the refining, is sold for animal feed.

Though milling technology is changing and harvesting has become highly mechanized, the
process of growing cane remains the same.

The cane-to-white-sugar chain starts a dozen miles from Clewiston in the dark brown peat that is nitrogen-enriched from centuries of Lake Okeechobee flooding. There the sugar cane sprouts and grows rapidly in the summer rains before the October-to-April harvest.

After milling and refining is completed, U.S. Sugar packages white sugar for dozens of supermarket chains and other customers in 5- and 10-pound bags. Bags of 50 and 100 pounds are packaged for bakeries, restaurants and other big users. Processed food manufacturers receive shipments of sugar packed in air-tight railroad cars.

To further cut costs, U.S. Sugar has joined with beet sugar producers in Minnesota and North Dakota to form United Sugar Corp., which jointly markets their sugar to manufacturers.

"The buyers have all consolidated," Buker said. "This puts us on parity."

KEY TO THE FUTURE

U.S. Sugar has reinvented itself before. The company tried vegetable farming and cattle raising over the decades before settling on citrus and sugar.

Now farming on 196,000 acres in south-central Florida, the company is determined that its capital improvements will be the key to its future.

"This company is not sitting around waiting for the government to protect us from foreign competition," said Coker.