Manufacturers in the United States face many challenges to remain competitive in the global marketplace. Companies must compete against a very cheap foreign labor while complying with strict environmental regulations here at home, often times with fewer resources. William Gittler, Jr. CEO of Catawissa Lumber & Specialty Co. Inc., understands this all too well. His 48-year-old company was nearly shut down when a boiler, paramount to facility operation, was found to be noncompliant with environmental regulations. However, technical expertise from Penn State's Pennsylvania Technical Assistance Program (PENNTAP) helped the wood products company comply with clean air regulations, ultimately allowing the facility to expand their operation and grow sales.

Noncompliance Issue Threatens Future of Company
Catawissa Lumber, which manufacturers Appalachian hardwood components for the furniture and cabinet industries domestically and internationally, operates two facilities in Pennsylvania, one in Catawissa and the other in Paxinos. Each plant has its own boiler, which utilizes wood residue generated on site for fuel to generate process heat for lumber drying and building heat. The Paxinos facility has room for future expansion and growth; however, the boiler was not passing the opacity and particular matter requirements of the current clean air regulations. As a result the company was cited for noncompliance by the Pennsylvania Department of Environmental Protection and given a year to come up with a solution to solve the boiler noncompliance issue.

Gittler asked the Pennsylvania Hardwood Development Council if they could recommend any resources that could help solve the boiler issue. On the Council's advice, he contacted PENNTAP, a technical outreach program at Penn State. An initial visit by John Pletcher, PENNTAP's wood industry technical specialist, to the site yielded some clues to the problem.

PENNTAP Identifies the Problem
"The boiler was designed to burn oil or woody residue but multi-fuel designs often compromise ultimate individual fuel to energy conversion for the convenience of being able to switch between fuel types," said Pletcher. He said the consistency of wood particle size and specie densities varied tremendously due to wide array of machines in the manufacturing process and that fuel size ranged from rough hogged material down to sander fines with a consistency of flour. "When concentrations of sander fines would be fed into the boiler, the fines would blow straight through the firebox through the fire tubes and out the stack contributing to particulate emissions," he added.
Pletcher’s initial solution involved mixing the residue to obtain a consistent blend for a uniform fuel to air ratio and reducing the combustion air velocity through the boiler. After learning the existing boiler was already maxed out and the company wanted to add more lumber dry kilns, it was determined that a new, larger capacity boiler was needed.

PENNTAP then brought in Bruce Miller, an industrial boiler expert with the coal utilization lab at Penn State’s Energy Institute. "I suggested fluidized bed boiler technology as a way to trap the very fine dust during the combustion process and prevent it from escaping into the flue gases," he said. Miller also provided Gittler with important industrial boiler association contacts to obtain additional information. PENNTAP also researched and provided policy and procedures involved with the permitting processes with Department of Environmental Protection.

Future Looks Bright for Catawissa Lumber

Catawissa Lumber moved forward with the help provided and coordinated by PENNTAP and purchased a new boiler with higher capacity that meets the clean air regulation using the range of byproduct and residue generated onsite. Gittler credits the expertise provided by PENNTAP for helping the company make timely informed decisions and to help them on the core operations of their business - the production of kiln dried hardwood lumber, dimension, and components. "Response time to our request was immediate, and input from Penn State's experts gave us valuable information for us to start our research for a boiler unit," he said.

As a result, Catawissa was not only able to maintain current production, but also expand capacity and grow sales from the Paxinos facility resulting in a reported economic impact of over $18 million and associated jobs.

PENNTAP, one of the nation's first technical assistance programs, has been helping companies in Pennsylvania since 1965 by providing one-on-one technical assistance through its own expertise, University faculty, and other service providers. Recently, PENNTAP reported 580 jobs created or retained and $38 million in economic benefits as a result of help in 2004. For more information about PENNTAP, visit http://www.penntap.psu.edu

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