CASE STUDY: **PPG Industries Fiberglass Products Inc.**

Location:	Lexington, N.C. (Davidson County)
Industry:	Textiles (SIC code 2200)
Pollution Prevention Application:	Source Reduction, Reuse and Recycling
Waste Reduction:	Solid Waste: over 30 million pounds
Annual Savings:	$6,797,000
Payback Period:	Immediate
Contact:	J.W. Buchanan

Background

PPG's Lexington plant, built in 1967, manufactures approximately 170 million pounds of fiberglass yarn annually to be used in various products including printed circuit boards and window screens. The facility currently has approximately 1,500 employees and operates 24 hours a day, 7 days a week.

Solid waste has been a major waste stream for the facility and one that management has been developing source reduction and recycling opportunities for over the past 10 years. Through the following activities, PPG in Lexington is now marketing approximately 44 percent of the solid waste generated at the facility.

Waste Reduction Activities

A major solid waste stream is nonstandard fiberglass generated during fiber extrusion and winding. This nonstandard fiberglass is in various forms depending on where in production it is generated. Through segregation and reprocessing, PPG has been successful in developing markets for a significant portion of this waste stream.

Some of the nonstandard yarn is processed through a cutting and opening system that produces a fiberglass web. This material can be marketed to companies that produce insulating materials for use in the automotive and construction industries. PPG has historically contracted out the reprocessing operation and marketed the material, but has recently purchased a system to process a portion of the nonstandard material directly into insulation mats onsite. PPG also has equipment onsite to remove nonstandard yarn from bobbins and chop it into 3.25-inch lengths to be marketed to the roofing industry. Additionally, PPG has established a program for bundling bobbins with low amounts of yarn, historically handled as waste yarn, to generate a first quality order.

In addition to the fiberglass waste material, PPG has established recycling and reuse programs for cardboard, office paper, scrap metal, polystyrene, pallets, bobbins, forming tubes and aluminum cans. Bobbin and forming tube waste is another production waste stream that has been a significant issue at PPG.

PPG has improved the construction of paperboard forming tubes to facilitate a longer life. The tubes are reused four to five times before they require disposal or damage repair. PPG has established a group of employees to identify damaged tubes and has developed a cutting device to remove frayed edges so that some damaged tubes can be reused. Additionally, PPG is experimenting with plastic

forming tubes to further increase production life. To reduce packaging waste generated by its customers, PPG has established a returnable packaging program where shipping tubes, bobbins and plastic pallets are bundled together by the customer and returned to PPG for reuse. PPG has significantly reduced the yield losses of recovered bobbins through the development of a customer manual on how to handle and package waste pallets and bobbins, improving communications with the contracted recovery group and its own employees on bobbin recovery, and using technologies, such as a water knife, to reduce damage during processing of recovered bobbins.

One of the final major solid waste streams going to the landfill is nonstandard fiberglass off the extrusion line that currently cannot be marketed. PPG is looking at techniques and technologies to facilitate marketing this material or for recovery and reuse in fiberglass yarn formation. In addition to activities in reducing solid waste, PPG has developed a wastewater minimization team to look at methods to reduce water use and wastewater generation throughout the plant.

Waste Reduced

In 1998, PPG successfully marketed 26.32 million pounds of waste fiberglass and processed 3,785,000 million pounds of waste fiberglass yarn into first quality product. Additionally, the facility has recycled 2.1 million pounds of other solid waste and recovers six to seven million pounds of bobbins for reuse annually. PPG diverted over 30 million pounds of solid waste from the landfill in 1998.

Annual Savings

PPG has realized income and cost reduction of over $6.8 million.