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**SOLVING THE HAZARDOUS WASTE PROBLEM:
ALTERNATIVE PROCESSES OR RECYCLING
MAY ELIMINATE WASTE PRODUCTION**

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More stringent regulations, rising disposal costs and growing environmental concerns are causing severe problems for companies which generate hazardous waste as part of their manufacturing operations.

But thanks to an innovative program operated by the Georgia Institute of Technology, a number of Georgia companies have reduced or even eliminated their production of hazardous wastes.

"The most effective way to deal with the hazardous waste problem is not to produce it in the first place," said Dr. John Nemeth, director of Tech's Environmental Sciences and Technology Division. "You can have very important and dramatic effects with waste reduction techniques."

The Georgia Tech program may help companies find alternative materials to replace hazardous substances. It may also suggest processes which do not generate hazardous wastes, recycling techniques which can reduce or eliminate waste production, or waste handling methods which cut down on the amounts generated, he explained.

While complying with environmental regulations may be the stimulus for companies to make changes, those improvements can mean much more.

"It's something that has a double payoff in environmental and human health protection, and in profitability of the companies themselves," Nemeth explained. "The more cost-effectively companies can operate, the better off they will be in international competition."

For example, one company's hazardous waste problem can be another company's raw material. Solvents that may be too contaminated for re-use in one process could be used in other process -- or as a raw material for a different product, he noted.

In many industries, said Nemeth, companies continue to use a traditional process even when a newer technique may be available. But if that new technique produces less hazardous waste, the modernization can pay important dividends.

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Decreasing the amount of waste generated will lower costs for disposal and treatment within a company, while the community's costs for treating waste water should decline as the quality of wastes improves. Environmental resources would also be less affected.

For large companies, reducing the production of hazardous waste can mean saving millions of dollars. For small companies, however, even relatively modest cost savings can affect the firm's bottom line.

Nemeth hopes the program will boost Georgia's goal of reducing hazardous waste production by 25 percent over the next decade. But he acknowledges that meeting the long-term goal of eliminating hazardous waste will take much longer.

"Alternatives have to be found right now," he said. "It is very expensive to try to landfill waste, and it is very expensive to incinerate hazardous waste. We think end-of-pipe solutions need to become extinct as soon as possible."

The Tech program began in 1983 as a technical assistance project designed to help companies meet environmental regulations. By offering confidential advice, the Tech scientists were able to help companies work out their environmental problems.

The program has now evolved. "The nature of our requests is changing to solution-oriented concerns from regulatory concerns," he said. "Companies would like to know how they can deal with their problems in a more cost effective way. It has become more and more an economic issue."

When companies request assistance, Tech scientists go into the factories for a complete audit of the chemical processes, the wastes produced and their ultimate fate. Specific recommendations are then made to the company, which then decides whether or not to implement them.

This type of service has recently been extended to the public sector through the Georgia Department of Labor. Public-sector agencies also use hazardous materials, such as chlorine for pool and water disinfecting, he noted.

In addition to the technical assistance, the Tech program also offers training programs designed to help industry better handle waste problems.

During fiscal 1988, the program assisted 55 companies with waste reduction programs designed to eliminate production of 224,920 pounds of hazardous wastes per year. At any one time, there is a backlog of 25-50 companies requesting assistance.

Nemeth would like to add a research component to the program, allowing Georgia Tech scientists to find solutions for other hazardous waste problems. Georgia Tech has requested funding to extend this service into research which would engineer pilot-scale solutions and transfer the new technologies to Georgia industry.

"Researching and developing these things is the key, because once that is done, we believe industry will see very positive long-term paybacks that will affect their bottom line," he said.

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