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TRANSMITTAL PAGE

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MESSAGE FOR: Russ Sackett

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MESSAGE FROM: Kevin Cahill

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Russ, this is final copy scheduled for publication in the spring edition. Please comment by first thing tomorrow morning.

DSW 136047

Kevin

Employees at Krummrich
Turn Their Plant Around

by Art Hoffman

STORYLINE

Teamwork helped Krummrich employees:

- *Reduce xylene air emissions by a million pounds*
- *Increase production*
- *Improve quality*
- *Reduce costs*

Employees at W.G. Krummrich clearly remember the announcement of the 90 percent program. "You could almost hear jaws dropping when Dick Mahoney said we'd cut emissions 90 percent," recalls one. "People were asking, 'How can they do this to us?'"

The rubber chemical plant's 4NDPA department was already facing serious challenges. "We simply weren't competitive, and we had a lot of catching up to do," says Stephen Robinson, then manufacturing director for Rubber Chemicals. (He is now director of corporate planning.)

There were other problems. The plant had gone through year after year of downsizing. Peoples' spirits were down. Also, there was a customer-versus-supplier mentality. "We really needed to look at ourselves in the mirror," Robinson says.

With all that – out of the blue – came the 90 percent air emission reduction program.

Business unit leader Russ Kuttenkuler remembers the feeling in the plant. "We were behind the eight ball. We knew we were critical to meeting the corporate pledge, because we had reported 830,000 pounds of xylene air emissions in 1987." (Xylene, a volatile organic, is used as a solvent throughout the 4NDPA process. 4NDPA is an intermediate ingredient used in making hundreds of rubber products, from tires to hoses.) "We'd never focused on recovering xylene," Kuttenkuler explains, "because it's relatively inexpensive. So we were pretty nervous. There was a lot of tension."

Kurt Martin, a process engineer who started work at Krummrich that year after getting his chemical engineering degree, had to hit the ground running. "The first week I walked in, everyone was saying that if we didn't come through with xylene reduction, the whole corporate effort would fail. I thought, 'Great. That's

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what I really want to hear.' I wanted to do environmental work – that's why I came to Monsanto – but I had no idea of the scope of the job we had to do. It was a lot of pressure."

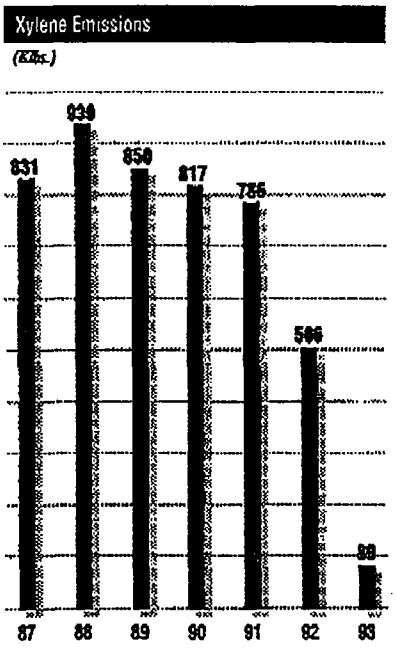
The pressure was shared throughout the unit. As mechanic Gene Mauer puts it, "We knew this couldn't be done overnight. And we knew no one person could do it. It would take lots of people sticking with it. That attitude was key to our eventual success." Dozens of people, at all levels, contributed in a variety of ways, large and small, to the successful reduction of xylene and, in a larger sense, to Krummrich's turnaround.

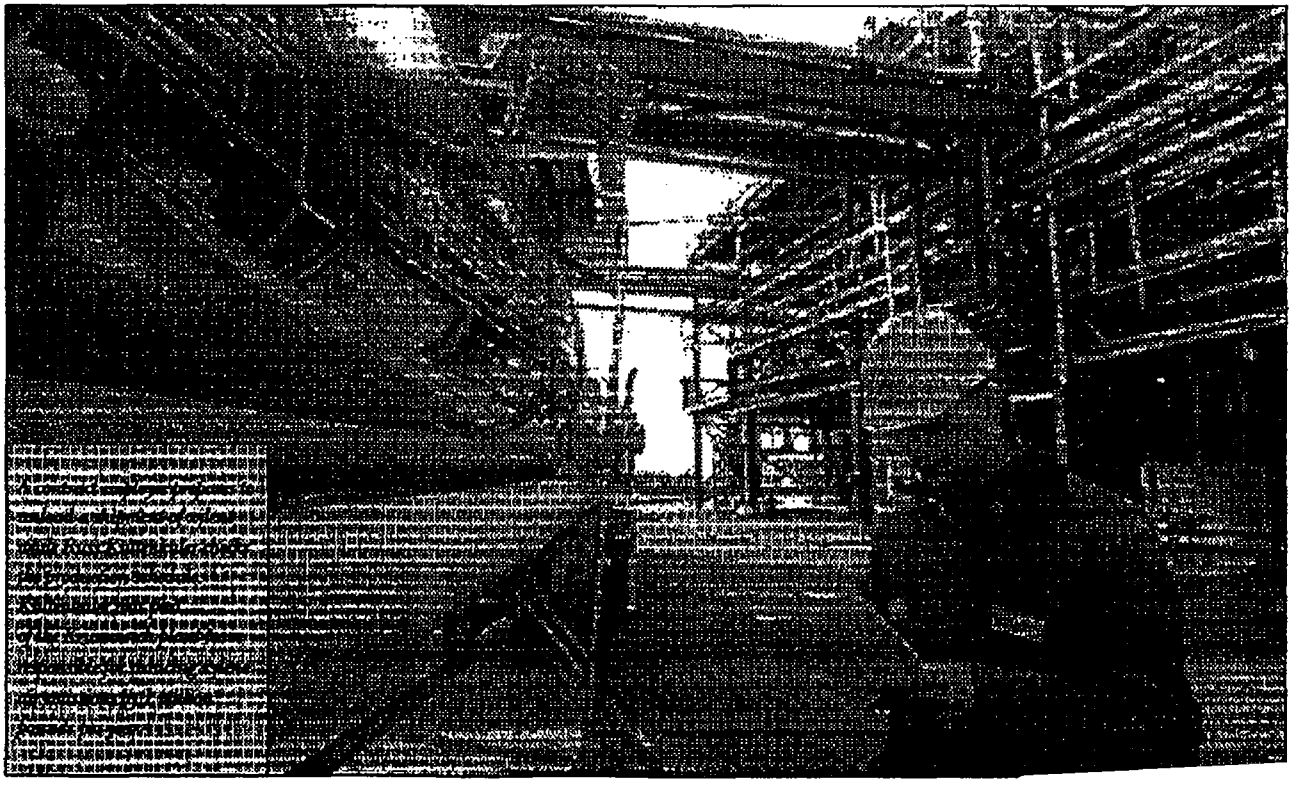
Electrician Virgil Keller, who marks his 30th year at Krummrich in 1994, noted a clear turnaround in management approach – and employee involvement. "It changed tremendously. In the '80s, management realized that workers had good ideas and were capable of doing more than punching a time card and being told what to do until they punched it again. Management decided to take advantage of that, and people have really responded."

Changes in management approach took different forms. One was organizational. Each business was given responsibility for its own focus and its own people; unit autonomy was supported all the way up the line. "This allowed a real team feeling to develop," remembers production supervisor Larry Cunningham.

The creation of natural teams was further supported by an unprecedented sharing of heretofore confidential information. "Management really opened up," Keller says. "We got information about our unit's financial picture, competitors' products, customer problems – you name it. It used to be we'd read something in the paper about Monsanto and hear about it at the plant a month later. Now, any question you have, you get an answer."

Another highly visible change involved overseas travel. Formerly, only high-level managers traveled to Krummrich's two sister plants in Antwerp, Belgium, and Newport, Wales. But in the late '80s, that changed. Operators, mechanics and others now travel overseas to inspect equipment and processes and to foster relationships with their counterparts. "Before 1989 an operator wouldn't pick up a phone and call an operator in Antwerp about a problem.





Rod Lacy, Rob Wahlgren and Jim Esmon check the clarity of a process water sample at the W.G. Krummrich plant in Sauget, Illinois. Teamwork at the plant has helped employees increase production, improve quality, reduce costs and achieve remarkable environmental

It just wasn't done," says plant manager Russ Sackett, who in 1989 was general manufacturing supervisor. "Since then, we effectively started a worldwide technical exchange."

The same thinking was applied to Krummrich's customers. Whereas before only managers visited customers, now employees at all levels tour customer sites to see how 4NDPA is used and to learn how Krummrich improvements can help customers.

The result of these changes is "a trust relationship," says Cunningham. "Trust came out of sharing and the team feeling of the business unit."

Ideas on ways to reduce xylene emissions began to flow. Many of the best came from weekly meetings of a Safety and Environmental Committee that included engineers, first-line supervisors, operators and mechanics.

The complexity of the 4NDPA process – and the ubiquitous presence of xylene throughout the process – meant that no single "fix" would work. Many different projects, which could take years to design and implement, would be required for success.

Projects were prioritized in three tiers: reducing, recycling and treating xylene. First tier individual projects resulted in reductions that ranged from 2,000 to 200,000 pounds. Taken together, these projects cut xylene by more than 600,000 pounds.

The second phase of projects – recycling – involved linking vents and installing condensers to trap and recycle xylene. That achieved another 160,000-pound reduction. This phase actually made operators' jobs harder, but no one complained. "We had excellent cooperation," Kuttenkuler recalls.

After reducing and recycling as much xylene as possible, the team pursued the third phase – treating xylene vapors by burning them in a thermal oxidizer. The oxidizer, installed in January 1993, was a "has-to-work" project, says process engineer Carrie Alspaw. "If it hadn't worked as well as it did, we couldn't have met the 1993 objective."

Underlying all three phases was another imperative – tighter preventive maintenance on all equipment to prevent breaks and leaks. This was critical. Even after all the various projects were accounted for, 100,000 pounds of xylene reduction "could only be attributed to improved maintenance and increased environmental awareness," Martin says.

Bottom line, Krummrich is a different plant today than it was in 1988. Krummrich people have reduced xylene emissions by a stunning 1 million pounds per year. They have increased production 40 percent. They improved quality so much that their work was cited as one of the top four performance improvement projects at The Chemical Group's 1992 Conference of Champions. Krummrich employees continue to bring down costs, with xylene-related savings alone accounting for $400,000 per year.

Cunningham says it best: "We've got a good thing going, and everyone's participating to keep it that way."