Explosion Fatal for Plant Worker

An explosion at a metal recovery plant killed one worker and endangered the lives of other plant employees as well as those working in the surrounding area.

The victim, a 20-year-old who had worked in the plant for about a month, was in the acid room, where epoxy coatings are removed from electrical components by soaking them in an acid bath. The remaining metal is collected and sold by the company.

He was killed when the acid solution reacted with organic compounds, creating picric acid, a very unstable chemical. The resulting blast blew out a large section of the plant's roof and concrete walls. A co-worker received serious burns in the explosion and five other employees were hospitalized briefly. Other workers in the area were treated for chemical exposure.

Investigators believe the blast was caused by the presence of larger-than-usual amounts of organic material in the bath solution. This resulted mainly from the company's new policy of recycling acid in the baths, and the fact that electric capacitors being stripped of epoxy were larger than usual, leading to greater organic compound build-up.

The fact many of the employees spoke only Spanish and may not have received adequate safety information in that language might also have been a factor. As well, "no smoking" signs were routinely ignored. While the company employed a chemist to oversee operations, he was apparently not aware of the danger of mixing these chemicals.

Investigators recommended that employers in this industry should:

- Consult with qualified people before changing chemical processes.
- Develop and enforce procedures for chemical and other processes.

- Conduct a job hazard analysis for all activities.
- Make sure employees become familiar with all resources on safety standards and safe work practices.

How about your workplace? Are hazards analyzed when procedures are changed? Is training and information offered in the languages of the workers?