

MR. HAAG: Our next speaker, Dr. Julius Bochinski, is the Manager of the Industry Study Group of Enviro Control. He was also deeply involved with the project. He is a chemical engineer from Iowa State University and the University of Detroit. During the past year he has worked in the area of control technology. Dr. Bochinski will be discussing the conclusions of the study and some of the significant findings in outlining some recommendations.

NIOSH CONTROL TECHNOLOGY ASSESSMENT
OF THE PLASTICS AND RESINS INDUSTRY

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

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Since all the attendees have been given a copy of the report (DHEW-NIOSH Publication No. 78-159), I will discuss only the highlights of this study. The areas I will address are:

- The need for a systems approach
- Recommendations for research
- Conclusions

Reduction of vinyl chloride levels in the PVC plant was achieved after a substantial effort to identify and reduce or eliminate emissions from all sources in the plant. In other words, you have to use a systems approach. Also, with a continuing effort by management in identifying and correcting problems with compliance with the vinyl chloride standards, compliance would not be possible. In my opinion, the most effective means of reducing emissions was stripping the monomer from the resins as soon as possible.

The problems presented for consideration for research by NIOSH were selected on the following basis: Resolution would result in a significant reduction of worker exposure; the problems are common to various segments of the industry; and the effort and cost involved would be commensurate with the expected results.

We have the following five general recommendations:

- The safety work practices are often the most cost effective investment. However, long-term success in the area depends on educational level of the worker and attitude of management, physical appearance of the environment, house-keeping practices and age level of the workers, and engineering controls operating effectively.

- Real time monitoring instruments are needed that are more reliable and simpler to operate and less expensive.
- Computer control of processes - further automation will reduce worker exposure, reduce human error. Automation with monitoring instruments of work procedures that have a high incident of worker exposure is needed.
- Better mechanical designs of certain equipment would reduce maintenance problems. Better seals and better materials of construction are most important. Improved seals on rotating equipment would substantially reduce worker exposure. Early failure could be the result of construction, poor preventive maintenance or improper installation.
- The additives were not evaluated. Many of the thousands of common though minor ingredients used may not have been subjected to toxic analysis and evaluation. Many of the additives are purchased as trade name products, so the users do not know what they really have.

In conclusion, reduction and exposure levels requires three things:

- Technical expertise
- Time
- Financial Resources

You must have sufficient technical capability, and you must have adequate time and financial resources to integrate your activities with the other activities in the company. Extrapolation of control technology must be done with care. Attention must be paid to physical and chemical properties of hazards you intend to control.

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MR. WALTER HAAG: At this time we will have a critique of the study report by John Barr of Air Products and Chemicals, Inc., followed by an open discussion of the study from the floor.

NIOSH

SYMPOSIUM PROCEEDINGS

Control Technology in the Plastics and Resins Industry

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health

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CONTROL TECHNOLOGY
IN THE
PLASTICS AND RESINS INDUSTRY

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