



A&WMA

THE AIR AND WASTE MANAGEMENT ASSOCIATION NEWSLETTER
Northern Ohio Chapter

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Nordson Corporation's pollution prevention program is explained

by Beth Barber,
The Nordson Corporation

The 33/50 Program is a voluntary pollution prevention program, sponsored by USEPA, designed to reduce emissions of 17 toxic chemicals by 33 percent in 1992 and 50 percent in 1995 as compared to a 1988 baseline. The USEPA Toxic Release Inventory reports (TRI) are used to track progress.

Nordson Corporation was one of 20 area firms that chose to participate in the 33/50 Program in 1992. An action list was created to guide Nordson toward the goals. Solvents that Nordson used were: methyl ethyl ketone, methyl isobutyl ketone, xylene, toluene, trichloroethane and dichloromethane.

Substantial investment

1,1,1-trichloroethane was used predominantly in degreasing operations. Process alternatives were needed prior to the elimination of the solvent. Replacement technology was investigated, engineered, and commissioned by fall of 1992 and required a substantial manpower and capital investment. Aqueous parts washing was chosen as the replacement degreasing operation. The difficult portion of the project was finding a water soluble cleaner that would cut through the oils used in the manufacturing processes. A speciality formulator partnered with Nordson and developed a terpene solution that adequately cleans machine parts, including the intricate details, without effecting the finish on the metal. By

1992 Nordson Corp. 33/50 Performance

Pounds of solvent eliminated from plant processes

Solvent	Goal (lb/yr.)	Actual (lb/yr.)
Methyl ethyl ketone	2,526	1,314
Methyl isobutyl ketone	12,170	3,894
Xylene	10,516	5,092
Toluene	6,475	6,666
1,1,1-Trichloroethane	11,700	9,262
Dichloromethane	1,900	495

eliminating 1,1,1-trichloroethane from processes it was feasible to remove the underground storage tanks that supported the obsolete process. The tank removal impacted additional environmental programs such as SARA inventories and SERC reporting.

A delicate position

Methyl ethyl ketone, methyl isobutyl ketone, xylene and toluene are used in testing and cleaning Nordson's equipment and end products. Nordson is in a delicate position because the overwhelming use of these chemicals is in customer demonstrations and not in the manufacturing process. The solvents are used as a paint carrier in the application process. Customers visit our demonstration lab and test our equipment with their paint. Paint is blended with solvents provided by Nordson. A solvent recovery system was chosen because Nordson did not

want to negatively impact customer service. A 15-gallon batch solvent recovery system was purchased and commissioned in 1992. Now that Nordson recovers solvents, less make up solvent is purchased and disposal costs are lower. In addition, two above ground storage tanks were removed from the facility.

The 33/50 Program provided several residual benefits to Nordson, in concept and reality. The concept was:

1) to build practical, cost effective pollution prevention programs

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Message from the Chairman

John Olmstead

We are all very pleased with the growth and success of our chapter of A&WMA. Our technical programs are generally well received, our newsletters have proven to be informative and useful to the membership we strive to serve, and our efforts in providing environmental resources to primary and secondary students are commendable. However, with growth, also comes growing pains. It has been noticed that the current meeting format that once met our needs, has become less efficient, due to ever expanding agendas, and that some of the membership are limited in their participation because of the planning committee duration. Your executive planning committee is sensitive and responsive to these issues. In order to improve the ability of our organization to meet the needs of membership, the executive planning committee is implementing changes to the structure and length of organizational meetings.

Beginning with the July 12, 1995 meet-

ings, issues coming before the full committee will be required to be discussed in subcommittee first. Once issues are discussed and resolved at the subcommittee level the executive planning committee will receive recommendations and issues needing executive committee approval. Time periods for subcommittee meetings will be provided immediately before and after the executive planning committee. The chairman (or vice chairman in the absence of the chair) will be responsible for limiting the executive committee duration to 60 minutes. This meeting will begin at 12:30 and terminate promptly at 1:30. Subcommittees may meet before the executive meeting at 12:00 and after at 1:30 and will take place at the CEI cafeteria. The executive committee meeting room location will be available from the receptionist.

All meetings will continue to be at Centerior Energy in Independence. It is our hope that streamlining the executive planning committee will remove

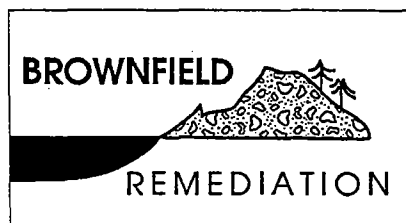
some of the time barriers to increased membership participation. A list of subcommittees and their chairmen are listed below. There are also two subcommittee chair positions vacant. If you have an interest in serving on any of these committees, please contact the individuals listed below or the NOC A&WMA Chairman at (216) 686-5100. Thank you for your support, participation and interest!

COMMITTEES

- Education- Charles Runyon
- Fall Technical Conference- Dennis Bush
- Spring Technical Conference- VACANT
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Voluntary Clean Up & Risk Assessment were topics in spring

The 1995 NOC/A&WMA Spring Conference was held at the Kent State University Auditorium on April 19, 1995. The topics of the conference were "Ohio Voluntary Clean Up Program (Brownfields) & Risk Assessment in Environmental Remediation". The con-



Amy Yarsevich of OEPA, Michael Gargas of McLaren-Hart/Chem Risk, and Ronald Marnicio of Foster Wheeler Environmental Corp.

One of the hot topics of discussion was environmental audit privilege. Under this program, companies would be able to access their compliance status without exposing themselves to enforcement action. Within certain restrictions, companies voluntarily performing self audits would be shielded from enforcement action on issues identified in the audit within certain restrictions.

The conference was co-chaired by Sardar Q. Hassan of R.E. Warner & Associates and David Lipiro of McLaren-Hart/ChemRisk. There were a number of organizations that arranged for table top displays.

ference was rated to have the appropriate mix of technical, regulatory and business issues. It was a well attended conference that met the needs of the audience as well as the expectations of NOC/A&WMA organizers.

The following speakers presented the latest developments in the regulatory and technical aspects of Brownfields program and Risk Assessment methods: Virginia Aveni of Cuyahoga County Planning Commission, Maureen Brennan of Baker & Hostetler,

FROM THE EDITOR

The Northern Ohio Chapter Newsletter, is published semiannually for members of A&WMA. Bob Perry serves as interim editor. Mr. Perry may be contacted at (216) 447-3217 at Centerior Energy, P.O. Box 31454, Independence, OH 44131. Membership dues include subscriptions to the newsletter. For membership information contact Michael L. Horvath at (216) 384-5964 or at Ohio Edison 76 S. Main St., Akron 44308.

PERSPECTIVE: *New USEPA Health Risk Assessment guidelines*

By Paul K. Scott,
ChemRisk, a Division of
McLaren/Hart

As part of the "residual risk" provisions of the 1990 Clean Air Act Amendments, many environmental professionals will become acquainted with Human Health Risk Assessments (HRAs). HRAs have been a part of the permitting process for Boiler and Industrial Furnaces (BIFs) and RCRA hazardous waste incinerators for many years. The USEPA is overhauling the existing rules for these sources, including new general guidelines on the way HRAs are performed. The initiative will establish more stringent permit requirements for BIFs and RCRA hazardous waste incinerators that now operate under interim status. A review of the proposed changes to the way human health risks are estimated will acquaint us with the HRA process.

Exposure re-evaluated

The first change to health risk assessments (HRA's) focuses on the way humans are exposed to pollutants. Existing permits have been issued based on the risks posed to humans by the inhalation of pollutants in the ambient air. The current USEPA proposal recommends the risk associated with all relevant exposure pathways be considered, including indirect pathways such as soil ingestion and the consumption of local produce, fish and meat products. In some cases this will increase significantly the estimated risk, as some materials bioaccumulate in the food chain.

Changing criteria

Another significant change is the use of a "reasonably maximally exposed" (RME) approach rather than the "maximum exposed individual" (MEI). The MEI approach involved calculating risk assuming that the individual was exposed under maximum conditions. For example, using the MEI approach, an

exposed individual is assumed to breathe air with the maximum air concentration at the highest inhalation rate, and consume only drinking water, fish, produce, and meat products have been impacted by the facility's emissions. The RME approach evaluates "upper bound" rather than "maximum" exposures through the use of a mix of upper bound and average exposure assumptions. For the RME approach, an exposed individual is assumed to inhale air with an average air concentration at an upper bound (usually 95th percentile) inhalation rate, and consume a more realistic fraction of local drinking water, fish, produce, and meat products impacted by facility emissions. While the RME approach is still a highly conservative method of estimating exposure, it is more representative of maximum likely exposures for the majority of the exposed population than the previous MEI approach.

Exposure duration

Other proposed changes include the use of less-than-lifetime exposure duration, such as 30 years, instead of the lifetime exposure of 70 years that previous guidelines suggested. Also, the EPA recommends separate exposure assessments for receptors with different potentials for exposure. For example, exposure for nearby residents, farmers, school children, and plant workers would be estimated separately. While this increases analysis time, it also gives more realistic information on the potential risks of facility emissions. Finally, the proposed guidelines require the use of both wet and dry-deposition air dispersion models to estimate air concentrations due to facility emissions. Since wet-deposition models will produce different results than dry-deposition models at the same receptor locations, this will significantly change the spatial distribution of the estimated risks.

In the new guidance, the EPA proposes the use of an "acceptable" or

target risk level of 1×10^{-5} for cumulative risks associated with all exposure pathways to carcinogenic chemicals. If this target is formally adopted, it would make the RCRA risk guideline consistent with criteria now used by many states. In the previous BIF rule, the sum of risks to inhalation exposures for just four metals (arsenic, cadmium, chromium and beryllium) could not exceed 1×10^{-5} . Thus, the new target risk represents a tightening of the BIF regulations.

Realistic assessments

In general, past Health Risk Assessment guidance has produced very conservative estimates of the risk posed by a facility's emissions via the inhalation pathway. While many of the changes EPA has recommended in risk assessment for BIFs and incinerators improve upon past guidance, there remain many changes that could lead to less conservative and more realistic risk assessments. The EPA should explore the use of probabilistic exposure assessment for use in BIF and incinerator HRAs. Probabilistic exposure assessment uses Monte Carlo analysis to calculate a distribution of risk by using probability distributions for exposure parameters instead of conservative point estimates. Also, the relevance and plausibility of indirect exposure pathways for a given facility should be considered. For example, the evaluation of meat and dairy pathways may be inappropriate for a facility operating in the center of an established urban area, where the nearest farm is ten or more miles away.

For more information, these proposed changes are contained in a draft memorandum issued by USEPA on September 24, 1993 titled "Implementation of Exposure Assessment Guidelines for RCRA Hazardous Waste Combustion Facilities" and a draft document title "Addendum to the Methodology for Assessing Health Risks Associated with Indirect Exposure to Combustion Emissions."



Ohio's Title V Program

by Dale A. Hedrick
Concord Environmental
Services, Inc., Akron

It is "high noon" for many Ohio manufacturers who were required to file a Title V Fee Emission Report with the Ohio EPA. The final deadline was extended from June 15 to July 15 and unless your facility applied, in writing, for a special extension until August 15, time to file with the EPA has run out.

As most environmental specialists know, the clock has been ticking away on this issue since the passage of the Federal Clean Air Act Amendment by Congress in 1990. Under that amendment, facilities which emit certain amounts of air pollutants were put on notice that they would be required to get new operating permits and pay fees based on their air emissions. (For details see our article in the spring '94 NOC-A&WMA newsletter.)

According to Ohio EPA personnel, the annual fee which a Title V facility will pay is based on actual emissions and is set according to the information documented in the Fee Emission Report. The fee for the initial reporting period will be \$17.58 per ton per year of pollutants.

In anticipation of the deadline to file the emission reports, the Ohio EPA prepared a Fee Applicability Question-

naire. The three question form was designed to help companies determine whether their facilities would be subject to Title V permitting provisions as described in the Ohio Administrative Code (OAC) Chapter 3745-77.

"In May the Ohio EPA estimates they distributed 15,000 questionnaires to facilities throughout Ohio," said Ms. Clara Dailey, Ohio EPA Permit Management Unit Supervisor. Although the questionnaire was not required to be returned, EPA Environmental Specialist Sara Geary reported that approximately 1,000 were returned to either the Central EPA office or to one of the field offices.

She added that, "If a company determined by this questionnaire that they were liable under Title V provisions, then they were required to complete and file the Fee Emissions Report.

Ms. Dailey, indicated that the EPA was anticipating between 2,500 and 3,000 facilities to participate in the Title V program as of August 2 but only about 10 percent of the expected emission reports or 300 to 400 have been returned to the EPA.

Ohio EPA submitted their complete Title V program package to the USEPA on July 20, 1994. If the program is approved on July 1995, as expected, the first group of industrial permit applications will be due in September 1995.

Title V seminar was a success




Interest in the new Title V Operating Program was running high on April 20. That day 165 environmental professionals met at the Cleveland State University Convocation Center to attend the Northern Ohio Chapter of the A&WMA half-day technical seminar and dinner focusing on the Ohio EPA Title V Permit System.

NOC Chairman Bud Kinney, kicked off the meeting. Tom Rigo, manager of Field Operations at the Ohio EPA, then provided an overview of the permit system. Mike Mathey, the manager of the automation unit at the Ohio EPA, demonstrated the Ohio EPA bulletin board and the newly available electronic reporting capability.

Clara Dailey, supervisor of the Permits Management Unit at Ohio EPA described the paperwork flow and timing within Ohio EPA.

Tom Rigo then came back and described how the existing Ohio Operating Permit System interfaced with Title V.

Mike Mansour of the Ohio EPA Engineering System, overviewed the NOx RACT rule, emissions statements, Permits to Install, and the DeMinimis rule. Later a panel of environmental professionals presented their experience with Title V.

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NOC announces Annual Scholarship Program

Beginning in December of this year, the Northern Ohio Chapter will be awarding annual \$500 scholarships to student chapter members who demonstrate outstanding commitment to environmental careers. No more than one scholarship will be awarded per student chapter, based upon the following criteria:

- 1) GPA of 3.2 or better for undergraduates, 3.5 for graduate students
 - 2) full time enrollment in an environmental-related major
 - 3) demonstrated leadership in extra-curricular activities
 - 4) quality of essay on a selected environmental topic.
- Additional information as well as

application forms will be made available to student chapter sponsors in early October. Applications will be due at the NOC by November 1 and the awards will be announced on December 19.

"The NOC is proud to recognize and support the outstanding achievements of our future environmental managers," said Charles Runyon, chairman of the NOC Education Committee. "We believe this is one of A&WMA's most fundamental and important roles in the advancement of our profession."

The NOC would like to thank Charles and the other Scholarship Subcommittee members who helped put this program together, including: Walt Kocher,



Robyn Katzenstein, Bob Perry and Dave Lipiro.

33/50 Pollution prevention program • Continued

- 2) enhance SPCC compliance
- 3) reduce the number of waste vendors and thereby reduce environmental liability
- 4) enable Nordson to enhance its public image by fostering sound environmental practices
- 5) environmental programs should provide a positive cost benefit to Nordson
- 6) remove above ground and underground storage tanks.

"..the program encourages recovery, recycling..."

The reality is that participation in the 33/50 Program raises corporate awareness from the top down. The program encourages recovery, recycling, and an overall waste minimization program.

Successful waste minimization requires managers to analyze their processes and to streamline operations.

The advances that Nordson Corporation has made as a result of the 33/50 Program have had a substantial impact on Toxic Release Inventory reporting because the release of our highest volume waste has fallen below threshold reporting quantity. Nordson continues to explore opportunities for reducing, reusing, and recycling additional waste streams.

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