

Beyond Awareness: Effective Outreach to the Metal Finishing Industry

*Linda Darveau, US EPA New England, Boston, MA
Dr. Ihab Farag, University of New Hampshire, Durham, NH*

Through funding provided by the Strategic Goals Program, EPA New England has launched an outreach program to industry that includes sponsoring Best Practices for Dragout Reduction Workshops and measuring the results of these workshops, conducting an internship program that provides hands on assistance, and obtaining corporate sponsorship for the Strategic Goals Program in New England. The outreach program focuses on nontraditional projects that go beyond simple awareness workshops to include workshops conducted in plating shops, interns working directly for members of the Strategic Goals Program, and encouraging large contractors to use financial incentives to improve subcontractor environmental performance. This paper will include detail on the National Pollution Prevention Roundtable (NPPR) research on outreach effectiveness, the results of the three projects undertaken by EPA New England, and the transferability of these projects to other regions.

For more information contact:

Linda Darveau
Environmental Scientist
US EPA New England
One Congress Street
Boston, MA 02114
Darveau.Linda@epa.gov

Introduction

From 1995 to 2001 EPA Region I implemented a metal finishing initiative involving both enforcement and assistance. The goals of the initiative were:

- 1) To assist metal finishers in complying with basic regulatory requirements,
- 2) To give metal finishers pollution prevention information that may allow them to go beyond compliance, and
- 3) To enforce against those metal finishers who did not meet regulatory requirements.

The assistance part of this initiative included outreach to partners such as trade associations, state regulatory and technical assistance agencies, interstate organizations, and colleges and universities. Most of the assistance involved workshops, conferences, meetings and tools developed with one or more of those partners. The enforcement efforts of this initiative included the formation of an Industrial Sectors Team consisting of a representative from each media and from the assistance division. This team worked together using various media specific databases and general industry knowledge to target poorly performing metal finishing facilities for inspections.

During the period of this initiative the Strategic Goals Program was developed as a partnership between industry and regulators to bring the metal finishing industry beyond compliance. The Strategic Goals Program (SGP) fit into Region I's ongoing initiative. Region I's established relationship with the metal finishing industry helped to get SGP programs in Massachusetts and Rhode Island off the ground quickly. Through SGP, Region I received funds from Headquarters that helped to support outreach activities. Region I would then use those outreach activities to recruit new SGP members.

Over the 6 years of this initiative Region I tried many different ways to reach metal finishers. Our experience and data shows us that the projects that were successful in changing behavior were the projects that went beyond awareness.

What is "Beyond Awareness" ?

Although Region I began to produce many workshops on different topics and they were usually well attended, they did not seem to have any effect on the compliance issues our inspectors were finding at facilities. Early in the initiative EPA decided to target workshops at the problems that inspectors were finding in the field. One such issue was Hazardous Waste Determinations. RCRA inspectors complained that the metal finishers they visited were not looking at their waste in any systematic way. Metal finishers were not sending samples of waste out for TCLP testing, and keeping the records on file as they were suppose to. As a result hazardous waste was often found in the dumpsters at metal finishing facilities. Workers were not trained to know what was hazardous waste and why because in many cases the facility owners did not know. Region I organized a half day classroom style awareness workshop on Hazardous Waste Determination. The workshop included information on hazardous waste classification, how to determine whether waste is hazardous, and how to document the findings. RCRA Inspectors presented what they would like to see when they do an inspection. The workshop was held at three different locations around the state of Massachusetts, and attendance was high and workshop evaluations were very positive. A few months after the workshops a RCRA inspector was on an inspection and someone at the facility said to her " Oh, I recognize you, I went to the workshop on

hazardous waste determination”. But, when the inspector asked to see the facility records, the facility had not done any hazardous waste determinations. As this story illustrates, it was the experience in Region I that awareness workshops often do not change behavior in the metal finishing industry.

The 2000 Summary White Paper by the National Pollution Prevention Roundtable’s Research and Technology Transfer Workgroup(1) reiterates this point. This paper states “ Most P2 Technical Assistance Providers focus the bulk of their technology-related efforts on educating businesses about P2 technologies. However technology education alone does not usually provide the site specific information required for implementation. Consequently, companies that receive only P2 information still have a low rate of adopting these technologies. “ Although this paper is focused on Pollution Prevention Technology, experience in Region 1 attests to the fact that many of these observations hold true for compliance assistance as well. This paper goes on to say “Most Technical Assistance Providers focus the bulk of their efforts on education. This approach includes practices such as workshops, seminars, case studies, fact sheets, and internet resources, etc. that distribute large amounts of information to many customers at relatively modest cost. However, technology education alone does not usually provide the site specific information required for implementation.” Region I conducted 21 workshops over three years, along with fact sheets, mailings, videos, and other traditional tools, and saw very little impact on compliance rates among metal finishers.

Beyond Awareness Projects

The following projects were successful in changing behavior. These projects are targeted not at what EPA wants the metal finishers to know, but at what EPA found out the metal finishers need. After working with metal finishers for several years EPA began to understand the challenges that face this industry. The biggest problem at metal finishing facilities and probably at most small businesses was the lack of time on the part of owners and operators. These people wore many hats, and ran a business that was technologically challenging. The other need that was recognized was lack of resources. Most metal finishers could not afford to hire consultants or to make major investments in new technology. The third issue faced by many small businesses is the lack of trust in government agencies. Even when free on site assistance was available many facilities did not take advantage of it because they did not want government agencies on their site. In order to try and address these needs the following programs were developed.

1) Internship program.

Working with the already established Pollution Prevention Consortium’s Internship program at the University of New Hampshire, Region I began to hire summer interns to work with metal finishers. During the first summer of this project two interns were hired to sign companies up to the Strategic Goals Program. Signing up to this program is a critical step for many facilities, because the SGP is the beginning of an environmental management system. It was the experience of the interns this first year that many of the facilities did not know how much water they used, how much energy they used or what it cost, or how much waste they shipped off. The interns had to contact utilities and disposal firms to get much of the information. Without this knowledge it is hard to imagine a company making any investment, whether it is money or effort, in change. During the second year of the internship, one intern worked full time at a job shop developing an environmental management system. This project gave Region I valuable insight into how an environmental management system can help a small job shop. It also proved very valuable to the participating company when they were coincidentally inspected by the state at the end of the summer. The second intern signed six additional companies up to the SGP and also conducted projects at various SGP plating shops that were intended to assist these shops in meeting their goals. These projects included designing a rinse system that would save one metal finisher over \$30,000.00 a year in water costs, testing a fume suppressant used in a chrome tank, and developing a database to track VOC emissions from paints and coatings. On the third year of this project Region I received enough funding for only one

intern. This intern spent time at eight different SGP shops. Two shops were new to SGP, so the intern filled out their reporting forms. The remaining shops were already members, so the intern worked on various projects including compliance related activities such as reviewing the facility RCRA program and filling out a water permit as well as testing rinse water and investigating close loop systems. It is hoped that Region I will be able to continue to offer the help of interns to SGP companies as a benefit to signing up and staying in the program.

2) Best Practices Workshops

The Best Practices Workshop focusing on drag out reduction was developed by Michael Keefe and Patrick Wooliver of Tetra Tech E. M. Inc. These workshops were different from previous workshops offered by Region I because they were conducted in plating shops. Designed for line operators, the workshops consisted of hands on experiments done by the participants. The results of the experiments were then graphed, so that participants had a dramatic display of the amount of drag out that could be saved by racking parts properly, using proper hang time and spray rinsing techniques. Tetra Tech has developed a spreadsheet so that cost savings can be calculated from this data. Evaluations immediately after the workshop found that 90% of attendees planned to bring information back to their facilities and use it. A follow up phone survey three months after the workshops found that 80% of the participants could point to actual changes they had made in their shops based on information from the workshop they attended. These changes included training, focus on parts racking, addition of spray rinses, and addition of drip pads and bars. These are changes that will lead to less dragout, less hazardous waste, lower water and chemical bills, and a more efficient and hopefully more economical processes. (See Graph titled Good Technique Matters!)

3) SGP Corporate Sponsorship

The third project on going in Region I is aimed at the issue of trust. Many facilities have resisted joining the SGP because it is perceived as an EPA program. In order to get more industries involved, EPA began to work with Raytheon Company. Raytheon, like many large contractors, subs out most of its plating to approximately thirty local platers. Raytheon does quality audits of its subcontractors, but does not have any institutionalized way of dealing with environmental issues among its subcontractors. They became interested in the Strategic Goals Program as a way to monitor subcontractors and track their environmental progress. Raytheon has a great deal of knowledge and expertise on environmental health and safety issues that they are willing to share with their smaller sub contractors. Raytheon signed up as the first SGP Corporate Sponsor as a way to develop a mentoring relationship with small job shops. The SGP workgroup meetings formerly organized by EPA are now being held at the Raytheon facility in Lexington, and it is hoped that this will be perceived as an industry program, not a government program. During the first workgroup meeting the attendees brain stormed a list of areas where Raytheon could help them, and these are being addressed at future meetings. So far two new companies have joined SGP as a result of Raytheon sponsorship. The workgroup members are now exploring developing a chemical management system for their facilities with Radian Corporation. Raytheon has a chemical management contract with Radian and has saved millions of dollars in chemical management costs over the past two years. Radian will be meeting with the smaller shops on November 13, 2001 to determine the feasibility of a similar program for small shops. Quarterly meetings of this workgroup are planned for the future. Raytheon is also starting a similar project for painting sub contractors.

Conclusion

EPA Region I found that the keys to effective outreach were developing creative assistance programs that went beyond awareness and even beyond what traditional technical assistance providers offered. This was done by developing an ongoing, long lasting relationship with the metal finishing industry, and good communication between enforcement and assistance staff at EPA Region I. It is hoped that we will be able to continue these relationships and become even more effective in the future. It is also hoped that other regions and states can learn from our mistakes and replicate our successes while developing their own successful programs.

(1)

White Paper, "Pollution Prevention Technology Diffusion: Role of Technical Assistance Providers."
National Pollution Prevention Roundtable's Research and Technology Transfer Workgroup 2000 Summary.

Good Technique Matters!

Dragout From Various Operator Techniques

