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WORLD ENVIRONMENT CENTER

POLLUTION PREVENTION CENTERS TRAINING

OCTOBER 13-16, 1996

World Environment Center
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New York, New York 10016

December, 1996

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Pollution Prevention Centers

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I. INTRODUCTION

The World Environment Center, under cooperative agreement ANE-0004-A-00-0048-00 with the United States Agency for International Development, is conducting waste minimization programs in Central and Eastern Europe. The establishment of Pollution Prevention Centers (PPC) to provide technical assistance and support to industries is an integral part of the program. As part of its PPC development and sustainability strategy, WEC conducts periodic training workshops for PPC staff.

In addition to the training workshop, discussions were held with PPC directors to discuss the preparation of business plans to identify, develop and implement appropriate strategies and action plans to sustain PPC operations after USAID support is no longer available.

II. EXECUTIVE SUMMARY

A training workshop for PPC staff from Poland and the Baltic Republics was conducted from October 13-16, 1996. The workshop topics for this training session were suggested by the representatives who participated in the PPC study tour conducted in August, 1996. The key topics identified by PPC representatives were the economic evaluation of waste minimization projects, accounting systems which foster the development of waste minimization programs in companies, and PPC operations.

Rita Lomasney, Director, Connecticut Technical Assistance Program (CONNTAP) and Samuel Perkins, GreenTech Consulting, were engaged to organize and present the training workshop on these topics. The training was a combination of lecture, practical exercises, role playing, and group work using case studies. Workshop manuals in Polish and English were provided to each participant. Thomas A. Pluta, WEC Program Manager was the workshop facilitator. Dr. Jerzy Barglik, Technical Coordinator, PPC/Katowice was responsible for local arrangements. The training was conducted at a conference center in Miedzybrodzie Zywieckie, Poland.

The preparation of PPC business plans was also discussed separately from the workshop.

III. WORKSHOP DESCRIPTION

The workshop was prepared in response to the requests for additional training from the Pollution Prevention Centers (PPC). The main topics requested were: (1) economic evaluation of waste minimization projects; (2) cost accounting systems that companies could use to support waste minimization activities in their plants; and (3) PPC procedures, policies and operations. These topics were covered during the PPC U.S. study tour in August, 1996.

Samuel Perkins, Green Tech Consulting , was one of the presenters at a visit to the Northeast Waste Management Officials Association (NEWMOA) in Boston, MA. NEWMOA was established by the Governors of the New England states to coordinate interstate cooperation in various waste management activities including pollution prevention. Mr. Perkins developed financial analysis training modules for both waste minimization projects and company environmental cost accounting systems, commonly known as activity based cost accounting (ABC). These two levels of financial analysis, project and systemic, are important foundations for successful implementation of waste minimization activities in companies. Identification of the "true" costs of waste management is critical to employee awareness and motivation for long term changes in reducing waste.

Rita Lomasney, Director, Connecticut Technical Assistance Program (CONNTAP) hosted the study tour group and briefed the group about the CONNTAP experience in establishing, developing and operating a technical assistance program. This experience is directly applicable to the PPCs which are developing technical expertise and programs which can contribute to the goal of sustainability as USAID support decreases.

Dr. Jerzy Barglik, PPC/Katowice, was responsible for local arrangements and support of all workshop activities.

The reports of the workshop organizers and presenters are attached.

APPENDIX A

REPORT OF SAMUEL PERKINS

GREEN TECH CONSULTING

REPORT

WORKSHOP OVERVIEW

CURRICULUM VITAE

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EXECUTIVE SUMMARY

This report documents the delivery of a training module on the financial analysis of pollution prevention that was presented as one part of a three-day training session held at Miedzybrodzie Zywieckie, Poland, from October 13 - 16, 1996. The thirty training participants included the staffs of the three Polish Pollution Prevention Centers, the Directors of the PPC's in the Baltic states and local PPC consultants. The purpose of the financial analysis training was threefold: 1) to augment the level of business language fluency among PPC staff; 2) to present the steps involved in performing accurate evaluations of the economic impacts of pollution prevention projects; and 3) to help PPC staff view and market pollution prevention as a tool to enhance the competitive position of their customers.

There appeared to be considerable interest in the topic due to its direct relevance to the mission of the PPC's and the need to sell, rather than give away, their services. Due to the relative paucity of environmental regulations in Poland and lack of vigorous enforcement compared to the United States, companies do not have many of the same incentives to pursue pollution prevention. Compliance costs and regulatory burden are much lower. Therefore pollution prevention must be more directly related to improving business operations and performance. Participants recognized the need to connect pollution prevention to cost savings and business metrics and thus seemed eager to understand the financial tools and methodologies. However, due to a lower accounting and financial knowledge base compared to US audiences, and due to the added complexities of presenting this module via an interpreter, the amount and difficulty level of the material may have been somewhat ambitious. Further or repeated financial training would benefit from some prior knowledge about local accounting and finance practices and some indication of the experience of the participants. Advanced training should be for a targeted group of PPC staff who could become the financial specialists within each organization.

INTRODUCTION

Purpose of Trip

The training session was comprised of two main topics, prepared and delivered by two consultant experts, Rita Lomasney, Manager of the Connecticut Technical Assistance Program (ConnTAP), and Sam Perkins, President of GreenTech Consulting. Tom Pluta, of WEC, also covered a variety of other issues. Ms. Lomasney discussed the structure and operation of a P2 technical assistance program, and Mr. Perkins presented information about financial analysis and business systems. Although there were several points at which it was possible to link aspects of the two topics, the material and the presentations were essentially independent and proceeded along separate tracks. This report focuses on that part of the program for which Mr. Perkins was responsible. (*See Appendix A for Mr. Perkins' resume.*)

Overview of Financial Training

The primary purpose of the financial training was to introduce the staff of the Pollution Prevention Centers to the concepts involved in performing financial analyses of pollution prevention projects. This was a first step is developing a basic level of fluency about business terms and accounting and corporate finance practices intended to enable PPC staff to converse with companies about the financial ramifications of pollution prevention initiatives. Further training could provide the additional information and experience to provide selected staff the competencies required to conduct appropriate financial evaluations. A related mission of the training was to demonstrate that pollution prevention should be considered and marketed not simply as a method for achieving environmental goals but also as a basic business tool for improving performance and enhancing competitiveness.

DESCRIPTION OF TRAINING

Training Contents

The financial analysis training delivered at Miedzybrodzie Zywieckie was based upon a one-day training course that Mr. Perkins has presented several dozen times to a variety of audiences in the United States. The material was modified for use in Poland to take into account the shorter timeframe due to the need for translation and also to place more emphasis on basic principles and avoid some of the more complex issues. The training utilized a combination of lecture presentation and group interactive exercises in approximately equal proportions.

Appendix B provides a detailed description of the purpose and objectives of the training and an agenda of the training session.

Training Delivery

The financial training was introduced on the first day of the session with a presentation of how pollution prevention should be marketed as a tool for optimizing financial and business results. The session formed a lead-in to Ms. Lomasney's discussion of how PPC's should think about marketing and selling their services. The main points focused on the similarities between pollution prevention and Total Quality Management (TQM) programs (process focus, continuous improvement, cross-functional teams etc.) and the value to a company of adopting quality and environmental systems such as those embodied ISO 9000 and ISO 14000.

The major portion of the financial analysis was concentrated during the middle day of the three day training session. Mr. Perkins started with a discussion of how poor cost accounting systems often hinder good financial analysis, and he introduced the concept of activity-based cost accounting as a tool that is useful not only for analyzing pollution prevention projects but also for improving business decision-making across a range of issues. The goal again was to broaden the view of pollution prevention and make a connection between P2 and good business practices,

not just good environmental performance. Following the session on accounting, which included the Evergreen Plating exercise, Mr. Perkins walked through the steps of collecting cost information, developing a picture of project cash flows and applying measures of profitability such as payback and net present value. The three-part Hudson Ice Cream exercise provided participants with practice in identifying potential savings, collecting cost information and performing discounted cash flow analyses. (*See Appendix B for a more detailed description of the training.*)

REACTION OF PROGRAM PARTICIPANTS

At the time of preparation of this report, translated program evaluations were not available. However, several trends emerged from anecdotal reports and discussions with a number of participants:

- **Relevance to Mission**: The training was directly relevant to the successful performance of the PPC mission. Because the PPCs must sell their services, it is imperative that they understand the financial side of pollution prevention and have the ability to market their product as a tool to enhance companies' competitiveness. Thus, even though few companies are at a point of doing sophisticated analyses with net present value, the PPC's need to learn and start talking this language.

- **Interest in Topic**: Because of its importance to their mission, there seemed to be substantial interest in the topic of financial analysis. One group was especially interested in learning more about activity-based costing and other business tools that could be applicable not just to pollution prevention but to improved operations of the entire business.

- **Quantity and Difficulty of Material**: For many participants there was probably too much material presented in too short a timeframe. In retrospect it would have been better to further limit the scope of the material and provide more basic business and financial information. Also one of the challenges in delivering this training was a lack of information about the level of participants' knowledge about fundamental business concepts and terms, as well as a lack of understanding about the current state of accounting and business practices for companies in Poland.

RECOMMENDATIONS

Prior to delivering further training on this topic or repeating this training to a different audience, either in Poland or another foreign country, I would make several actionable recommendations:

- **Audience Survey and Research Into Country Business Practices**: To better prepare for the training and suit the material to the participants it would be useful to understand their level of knowledge about the topic and also to become acquainted with some of the accounting and business practices of the country. The first issue could be satisfied with a simple 1-page survey, distributed a few weeks in advance of the training. The second matter would require some discussion with practitioners to understand current and leading-edge practices. Although I am not familiar with other business training that the PPC staffs may have had, I would recommend that prior to any further training specifically in financial analysis there should be training in issues such as accounting, depreciation, taxation, discount rates, discounting, time value of money, etc.. Before one can learn the language of financial analysis it is necessary to learn the alphabet of business, accounting and finance.

- **Advanced Training Audience**: It is useful for all staff in a PPC to have a fundamental knowledge about the concepts that underlie financial analysis in order to be able to speak the language of business and market pollution prevention successfully. It would make sense, however, for just two or three people within each center, who have more experience and knowledge in accounting and finance issues, to continue on with advanced training. A multi-day course could be held for that group, which might number eight or nine people, to elevate them to the point where they could become the financial specialists who could provide assistance to companies in performing financial analysis.

- **Advanced Training Contents**: The advanced training would cover a lot of the complexities - taxes, inflation, finance method, ranking multiple projects, project risks and uncertainties - that make the financial analysis of a pollution prevention project more representative of a real life situation. It would also involve one or two case studies of actual firms and the steps that they took and the challenges they faced in analyzing pollution prevention projects. Ideally, the advance workshop might also involve a hands-on computer session learning about software (P2 Finance) that's been developed to perform financial analyses of pollution prevention. Although the measures of profitability - net present value and internal rate of return - which the software calculates may not be suitable for use with a lot of Polish companies at this time, the real value of the system lies in how it prompts people to look at the full inventory of costs and savings that should be considered for a pollution prevention project and thus helps in the identification and collection of data regading those costs.

- **Management of Contractors**: When contractors participate in a WEC program such as the one in Poland, they face a number of challenges. Better information beforehand would help overcome some of the uncertainties and assist contractors do a better job developing and preparing for the delivery of material. While some of those uncertainties can not always be fully anticipated beforehand, there are a couple of generic issues, some mundane but valuable, that could be written up as a guide. A few examples:

  - The impact of oral translation on the timeframe for training delivery. It seemed that it took more than twice as long to deliver the material.

  - Appropriate attire for delivering training. What impression do we want to project?

  - Cultural do's and don'ts. It would be helpful to have some background information about the country's culture and social practices, including food, manners, important and taboo behaviors, etc. Also valuable would be a psychological profile describing learning and decision-making patterns that would aid in material design and presentation delivery.

APPENDIX A

IMPROVING YOUR COMPETITIVE POSITION
Financial Analysis of Pollution Prevention Investments

Overview

Pollution prevention offers businesses an alternative approach to achieving environmental management goals and regulatory compliance that avoids many of the costs and liability risks inherent in traditional pollution treatment and control strategies. Yet, unlike mandated control expenditures, pollution prevention investments often must compete with other projects for a firm's allocation of capital. A complete and proper analysis of pollution prevention initiatives should capture all the economic and competitive benefits they provide.

The Problem

In theory, the financial analysis of pollution prevention employs the same tools that businesses use to perform the economic assessment of any investment in new plant, equipment or other long-lived assets. In practice, however, many of the savings and benefits enabled by pollution prevention techniques are either underestimated or ignored in the capital budgeting process. Most companies have a poor grasp of the magnitude of their environmental costs and a worse understanding of which processes and activities drive those costs. This lack of information contributes to the failure of firms to recognize the extent to which those costs are reduced or eliminated through prevention measures and thus leads to an undervaluation of their economic impact.

The Answer

The key to an accurate financial analysis of pollution prevention starts with an awareness of the full inventory of costs that could become potential savings and an understanding of how these costs are usually 'hidden' in conventional management accounting systems. Acquiring accurate cost information requires a knowledge of the relevant costs, their sources and the obstacles to their collection. Good information can then be processed through the standard financial methods to complete the analysis.

What This Workshop Offers

The workshop steps through the process of analyzing a pollution prevention investment, beginning with an overview of accounting practices and hidden costs and leading into a discussion of the means of collecting useful information. It then turns to a review of the basic methods for analyzing costs and also introduces the many possible qualitative factors that could have an impact on a decision to implement a pollution prevention project. The workshop proceeds in two parallel tracks with direct presentation followed by interactive group exercises that reinforce the concepts and processes.

What Participants Can Learn

Workshop participants can enhance their knowledge of the following business and environmental tools and issues.

- management accounting systems: conventional, activity-based, environmental
- collecting cost information: methods and challenges
- capital budgeting
- time value of money
- measures of profitability: payback and discounted cash flow (NPV and IRR)
- qualitative benefits of P2 and their impact on business competitiveness

Workshop Agenda

Introduction

- Pollution Prevention Basics
- P2 and its relationship to TQM, ISO 9000 and ISO 14000
  - Overview of Financial Analysis of P2 Projects

Accounting Systems

- Financial and Management Accounting Systems
- Conventional and Activity-Based Cost Systems
- Hidden Costs
- **Group Exercise**: Identifying waste streams and cost generators

Collecting Cost Information

- Sources of Cost Information
- Obstacles to Collecting Good Information
- **Group Exercise**: Collecting cost information

Financial Analysis

- Incremental Cash Flows & Economic Lifetime
- Payback
- Time Value of Money & Discounting
- Calculating Net Present Value & Internal Rate of Return

Pollution Prevention Project Evaluation

- **Group Exercise**: Performing NPV analysis of P2 options

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Experience

1993 - Present **GREENTECH CONSULTING** **WEST ROXBURY, MA**

President. Develop curriculum materials and teach classes for academic and environmental organizations. Current and recent client work includes:
NE Waste Management Officials Assoc. (NEWMOA). Prepared booklet to educate lenders about benefits of pollution prevention. Developed manual to train small businesses in the financial and qualitative assessment of pollution prevention projects. Conducted training at EPA regional offices.
Toxics Use Reduction Institute (TURI). Developed and taught modules on Cost of Toxics and Financial Analysis for TUR Planners certification course.
Babson College. Taught course: *Issues in Environmental Management.* Prepared business cases for use in the Babson MBA program and at the Babson School for Executive Education.
Massachusetts Office of Technical Assistance. Financial specialist. Assisted companies wi

1991 - 1993 **BABSON COLLEGE** **BABSON PARK, MA**

Babson Fellow. Developed MBA course on environmental management issues.

1991 - 1994 **STACKPOLE CORPORATION** **BOSTON, MA**

Summer intern (91) Consultant (93-94). Developed waste minimization resource information and corporate environmental spending analysis. Prepared prospectus for disposition of subsidiary.

1984 - 1991 **COTTONWOOD COMPANY** **BOSTON, MA**

General Manager. Managed real estate development company with responsibility for office administration, accounting and project management functions.
Affordable Housing Consultant. Assisted communities and non-profit developers evaluate affordable housing development opportunities.
Project Manager. Coordinated site engineering design, environmental approvals and construction biding analysis for 120-unit HOP condo project. Managed numerous 2&3-family renovation/rehabilitation projects

1982 - 1984 **POCONO LAKE PRESERVE** **PENNSYLVANIA**

Contractor. Collaborated with architect on custom house construction.

1979 - 1981 **INSTITUTE FOR INTERNATIONAL STUDIES AND TRAINING** **FUJINOMIYA, JAPAN**
KYOTO LANGUAGE SCHOOL **KYOTO, JAPAN**

English Teacher. Taught English language classes to Japanese businessmen.

Education

1991 - 1993 **BABSON GRADUATE SCHOOL OF BUSINESS** **WELLESLEY, MA**
Master of Business Administration, May 1993. Summa cum laude.

1972 - 1977 **PRINCETON UNIVERSITY** **PRINCETON, NJ**
AB English Literature, June 1977. Student Manager Princeton Pub.

1968 - 1971 **PHILLIPS EXETER ACADEMY** **EXETER, NH**
Classical diploma, June 1971.

Personal Interests include organic gardening, woodworking, investing, soccer coaching.

APPENDIX B

REPORT OF RITA LOMASNEY

CONNTAP

REPORT

CURRICULUM VITAE

Final Report

PPC Training
Poland

October 13-16, 1996

Instructors: Rita Lomasney, ConnTAP
and Sam Perkins, GreenTech Consulting

Report Submitted to: Tom Pluta, Program Manager
World Environment Center

Report submitted by: Rita Lomasney

December 17, 1996

Executive Summary

A two-week U.S. study tour for Polish and Estonian Pollution Prevention Centers (PPCs) was organized by the World Environment Center (WEC) in August 1996. Staff from two of the organizations visited during the tour (Rita Lomasney from the Connecticut Technical Assistance Program and Sam Perkins with NEWMOA) were invited to conduct a training program for Polish PPCs in October 1996. Staff from the Baltic PPCs (Latvia, Estonia, and Lithuania) were also invited to participate.

The training program consisted of two tracks: Financial Analysis and PPC Operations. The first track focused on how to evaluate pollution prevention projects using the same accounting principles which businesses utilize. The second track consisted of seven modules which dealt with administrative issues related to operating a PPC.

The 2.5 day training session was held in Miedzybrodzie Zywieckie, Poland at a facility which provided accommodations and meals for all participants, as well as state-of-the-art training facilities. Most of the planned agenda was covered during the allotted time, however, some sections had to be abbreviated. Only one module on Administrative Protocols was not covered at all.

All of the training seemed to be well received. As expected, participants seemed to favor hands-on activities, rather than lectures. Funding for PPC operations was the topic that seemed to be of most interest to attendees. Sales and marketing also generated a lot of interest.

One conclusion drawn from the training was that the knowledge and experience of the staff from the different PPCs varied significantly. The consultant's recommendation is that similar future training be conducted for individual PPCs and that the staff from each of the PPCs be more involved in planning and delivering this training. Also, it is suggested that WEC consider offering additional training for PPC administrators to assist them in developing necessary skills to allow their centers to be more self-sufficient. Finally, the consultant suggests that the Polish PPCs consider forming a "regional roundtable" to facilitate sharing of experiences and expertise.

Introduction

In August 1996, a study tour hosted by the World Environment Center (WEC) visited the United States. The group included directors and technical staff from three Polish and one Estonian Pollution Prevention Centers (PPCs). One member of the Estonian Ministry of Environment also participated. The group began its tour in New York, then traveled to Connecticut, where it toured a copper and brass mill that had implemented a successful pollution prevention program. The group also met with the Connecticut Technical Assistance Program (ConnTAP), which arranged the tour. Staff from ConnTAP, led by program manager Rita Lomasney, shared experiences learned during more than four years of providing on-site technical assistance.

The study tour next traveled to Massachusetts, where the group met with a number of organizations, including the Massachusetts Office of Technical Assistance, the Toxic Use Reduction Institute at the University of Massachusetts/Lowell, the USEPA in Boston, and the Northeast Waste Management Officials' Association (NEWMOA). At NEWMOA, the group received a presentation on financial analysis from Sam Perkins, president of GreenTech Consulting, who works as a consultant to NEWMOA. The study tour concluded its visit with travel to Pittsburgh, PA, where they visited the Air & Waste Management Association and Carnegie Mellon University.

Several weeks after the study tour, Rita Lomasney and Sam Perkins were each contacted and asked to assist WEC in conducting a training session in Poland. The training session was to be between 2.5 and 3 days in duration and would focus on the needs of Polish PPCs, although PPCs from the Baltic states would also be invited. The training was to be held October 13-16, 1996.

Training Curriculum

The training curriculum for the Polish PPCs consisted of two separate, yet related, sections: 1) PPC Operations and 2) Financial Analysis. The trainers for these sections were Rita Lomasney and Sam Perkins, respectively. The trainers made every effort to identify and provide linkages between the two training topics, both in the preparation of the training materials and during the presentation.

This report will focus on the PPC Operations section of the agenda. This section was organized into seven modules, as follow:

Targeting;
Marketing and Outreach;
Sales and Communication;
Issues and Barriers;
Administrative Protocols;
Funding and Staffing; and
Technical Resources.

These seven modules were developed in response to WEC input about what participants needed. WEC staff advised the consultant that the attendees from the Polish PPCs had previously been trained by U.S. experts on: 1) how American technical assistance programs operate and 2) how to conduct an on-site pollution prevention opportunity assessment. It was agreed that the training in October 1996 would not include any technical aspects of the actual assessments, but would focus on other aspects of PPC operations. The consultant was advised that each of the Polish PPCs had been in operation for approximately two years. The goal of the training was to: 1) reiterate lessons about sales and marketing; 2) build confidence among PPC participants: and 3) identify and address any issues which were limiting PPC operation.

Other training topics, such as administrative protocols, funding and staffing, and technical resources, were selected based on interest from participants during the August 1996 study tour in the United States.

For each training module, an associated, interactive exercise was developed. These ranged from group brainstorming, to role playing exercises, to actual creation of tools that could be used in sales and marketing.

Training Agenda

Initial Agenda

The initial agenda was established through conference calls between the two trainers and Tom Pluta, WEC staff liaison. It was agreed that the training would start on Monday morning, rather than Sunday afternoon, as initially discussed, and conclude after lunch on Wednesday. The agenda would begin with introductions from WEC, the host PPC from Katowice and self-introductions from the trainers.

The draft agenda incorporated all of the planned activities, although many of the modules in the PPC operations track were not allotted the time that had been planned by the instructor. The instructors agreed that the draft schedule would serve only as a guide and that the trainers would be flexible in making needed changes as the training progressed.

All training materials from both instructors were provided ahead of the training so that they could be translated into Polish. This included overheads, handouts, and exercises, which together made up the training manual. The manual was provided in English and Polish.

Actual Agenda

Day 1

The training began with approximately 30 participants from three Polish PPCs (Silesian University of Technology in Katowice, Lodz Technical University, and Atmoterm, a private consulting firm) and one participant from each of the three Baltic PPCs (Latvia, Estonia, and Lithuania).

Translation services were needed because the instructors and the attendees from the Baltic states spoke only English and some of the attendees spoke only Polish. Many attendees appeared to understand some English, although their main language was Polish. Two translators were used during the sessions.

Rita Lomasney began the training with a thorough description of her program's operations, including its history, mission, targets and structure. She also discussed lessons learned from 100 site visits conducted over four years. Comments from participants acknowledged the differences between ConnTAP and Eastern European PPCs, specifically funding sources and prospects for continued subsidies into the year 2000. There was specific interest in the U.S. custom of using retirees who are paid nominal wages as staff for technical assistance programs (TAPs). Participants felt such a system would not work in Poland because most people do not have pensions and cannot afford to retire at an early age. Also, the fact that ConnTAP provides free services was felt to be an insurmountable difference between it and all of the PPCs, especially the Baltic PPCs. Funding for PPC operations was raised as an issue and it was agreed that, although there was a specific section of the training to discuss this topic, it should also be a theme during the other sections. It was also discussed that a main goal of any assistance program should be to motivate businesses to want to help themselves.

In the next section, Sam Perkins introduced the topic of selling pollution prevention to businesses.

The first PPC Operations module presented was **Targeting**. Rita presented ConnTAP's experience in selecting target audiences for its services. The message of selling PPC expertise was discussed. Participants discussed potential customers and how they should be addressed, as well as the special expertise each PPC has. Some concerns expressed included: 1) the fact that currently customers for PPCs are selected by WEC; and 2) how to modify the approach to suit facilities with different motivations and needs. It was pointed out that trade associations can be good partners, based on PPC experience. Two ideas were offered about how to demonstrate expertise: 1) that case studies are a useful tool; and 2) that sometimes it is useful to give a potential client some services for free initially, so that they can get to know the organization and its staff. Atmoterm's experience has demonstrated that this is a successful technique for securing further contracts.

Attendees brainstormed a list of potential customers which included the following industries:

* Chemical plants (medium size)
* Sugar
* Machine tool facilities
* Agricultural facilities
* Metal ore processing
* Cement
* Foundries
* Paint shops
* Metal processing (drawing, stamping, etc.)
* Dairies
* Tanneries
* Breweries
* Textile

The group also identified decision makers as a group which needs to be educated about pollution prevention. Participants discussed selection criteria for clients and identified the following issues:

* Size of company
* Pollution potential
* Location
* Competitor's size
* Financial status
* Willingness to pay
* Regulatory priority

Participants also discussed how to approach prospective clients and classified the steps as follows:

* Get information about the plant
* Ask/tell what key problems are
* Identify possible solutions
* Identify ways to market raw materials from "wastes"
* Provide "another view"

The group broke down the process outlined above into three steps: collect, organize and assess. The hands-on exercise associated with this module was for the participants to break up into small groups, in this case by PPC (with the Baltic participants joining together to form one team). Each of the four teams was assigned to write a letter that they would send to a prospective client in a particular industry. The groups were given approximately 30 minutes to compose their letters, then each group had a representative read their letter and explain what industry it was targeted towards. The participants gave feedback on which was the "best" letter and why they thought so.

The instructors also identified key concepts that each group used and provided feedback. Some of the key messages used in most of the letters were:

* Credibility (amount of experience);
* Benefits of pollution prevention, especially financial savings to company; and
* Confidentiality.

Only one of the four groups (Katowice) included in its letter a statement that they would follow up with the company at a particular time. This group also included in its letter a reference to a past meeting and a knowledge of the needs of the company. This letter mentioned ISO 14000 as a new idea which might get the company's attention, especially if they do not know much about it. Most participants agreed that the Katowice group's was the best letter. It was also pointed out that a copy of a sample targeting letter used by ConnTAP was included as an attachment in the training manual. Rita indicated that the typical company response to these types of letters may be ten percent.

The next module presented was **Marketing and Outreach**. The importance of setting goals was discussed and methods for recruiting clients were presented. It was stressed that goals should be updated on a regular basis, possibly annually, based on progress. A brainstorming exercise to identify potential partners followed. The value of each potential partnership was also discussed.

An unexpected addition to this list of possible partners was other PPCs. Participants felt that their counterparts might be sources of expertise they could utilize. A videotape about ConnTAP's experience working with a Connecticut company was shown to demonstrate the power of video as a marketing tool. This section concluded Day 1.

Day 2

Day 2 began with the third module on PPC Operations, **Sales and Communication**. The importance of identifying "core messages" was stressed. Some examples from the targeting letters were discussed. The difference between selling the concept of pollution prevention (industry motivators) versus selling a PPC's expertise was also covered. Rita explained how ConnTAP handles sales for its Site Visit Program, including its "initial visits".

Rita also addressed the importance of 1) knowing your client and listening to what they want; and 2) building credibility. The group discussed the importance of employee participation in pollution prevention projects and several participants shared experiences related to this topic.

Rita briefly presented the fourth module in the PPC Operations track, **Issues and Barriers**. She explained what issues had kept ConnTAP from implementing its on-site assistance program. The three main issues were confidentiality, liability and concerns over regulatory compliance. Participants indicated that liability is not much of an issue in Poland, however, confidentiality is a very important issue. Attendees felt that they would not want to limit their potential client pool to only businesses which were in compliance with applicable regulations. This input came primarily from Atmoterm, which also helps businesses with compliance matters.

Some of the questions raised during this section were: 1) How is the effect of ConnTAP's program measured? and 2) What is the feedback from clients and how is it obtained? A significant amount of discussion ensued about the difficulties in obtaining input from clients and issues related to program evaluation. A planned brainstorming exercise was postponed until Wednesday. The exercise was to identify existing PPC barriers and to develop strategies to overcome these obstacles.

The rest of Day 2 dealt with Financial Analysis and related exercises. All of the planned material on Financial Analysis, including the Evergreen Plating Company and Hudson Ice Cream Company exercises, was covered during Day 2.

Day 3

In preparation for Day 3, the instructors discussed planned material not yet covered, including modules on **Administrative Protocols**, **Technical Resources**, and **Funding and Staffing** and the conclusion of the Issues and Barriers section At the beginning of Day 3, Tom Pluta polled the participants to get their feedback on which topics they were most interested in. Based on participants' needs, the following topics were selected for Day 3, in order of interest: 1) Funding; 2) Issues/Barriers; and 3) Technical Resources. Tom Pluta made a presentation on funding options for PPCs and facilitated a discussion on PPC barriers. Rita Lomasney made a brief presentation on the availability of technical resources, especially through Internet connections. She also discussed how her program currently organizes its resources to maximize their efficiency.

The training program concluded with closing remarks from each of the instructors. For the PPC Operations track, Rita Lomasney concluded by stressing the importance of targeting and goal setting for developing business plans. She also repeated two messages:

1. Listen to your customer, and
2. Identify your core mission and seek funding that will allow you to meet it.

Evaluation forms were completed by all participants.

Reaction of Program Participants

In general the participants seemed very receptive to all of the training. They seemed to really enjoy the interactive exercises and produced work products that were superior to what was expected by the instructor. As anticipated, long sessions of lecturing did not seem to be as effective.

Problems Encountered

* Translating all communications (instructor and attendee) took much more time than expected. This may have been partially due to the inexperience of the instructors in utilizing translation services.

* More preparation and information before the trip would have been useful to the instructors. For areas like funding, having more up-front more information about the current system in the affected countries would have allowed the instructor to better prepare an effective presentation. Also, knowledge about "hot topics", such as the current USAID funding reductions in the Baltic Republics as programs are closed out would have been useful.

* Because the participants in the course came from different PPCs, their level of awareness and experience varied significantly. This was especially noticeable between the Polish PPCs and the Baltic PPCs. Different levels of knowledge makes developing and delivering an effective training program an especially difficult challenge.

Conclusions

The staff from the Polish PPCs appear to be very knowledgeable. They seem to have a good grasp of the issues that need to be dealt with.

Although the trainers were present primarily to share U.S. expertise with the participants, it is not unexpected that the trainers were also able to learn from the students. The concept of "charging" companies based on a percentage of the savings realized is one which is of interest to ConnTAP. This training was the first time that staff from ConnTAP had heard of people who had actually tried to implement this type of fee. The Polish success with this type of arrangement is motivation to try a fee-based system in Connecticut.

Recommendations

Several specific recommendations follow:

* Due to the diverse needs and make-up of each Polish PPC, it is recommended that some time at future training courses be allocated for each PPC to meet individually. Although PPCs can learn from each other, it is felt that there are remaining issues related to administrative operations which are PPC specific.

* It is recommended that future training focus on the specific barriers that each PPC faces which currently restrict activity. It is apparent that these issues will differ between Polish PPCs. Each PPC needs to develop its own goals, which are one element of its business plan.

* It is recommended that the directors and technical coordinators from each PPC be taught management skills which will help them facilitate implementation of their assistance programs. As WEC support (not just financial, but programmatic and administrative) is withdrawn, these staff will need to perform functions which may not have previously been required of them in their technical capacities. A perfect example is the development of business plans. In order to build their confidence about these new responsibilities, action should be taken now to assist them in developing these new skills.

* It is also recommended that WEC encourage development of a regional network for the Polish PPCs. A formal or informal arrangement would allow staff from the PPCs to help each other with technical or administrative issues. Regional roundtables have been very effective in the United States and have avoided unnecessary duplication of effort. These groups typically meet quarterly.

* In order to get a broader perspective of similar activities outside Poland, the European Cleaner Production Roundtable may be a good resource for the Polish PPCs to interact with on a regular basis. This group hosts annual conferences which draw participants from countries around the world.

* One way to reduce the need for translation at future training programs is to have staff from the PPCs (management-level) facilitate portions of the training. This may also be a new skill which needs to be cultivated.

Training and facilitation experience may prove valuable in providing services to the PPC's clients. In addition, as new individuals are added to each PPC's staff, some training could be provided by the managers. It is understood that staff turnover is an especially difficult problem for the Polish PPCs. It is possible that, if more frequent and timely training were offered, the volunteers would work with the PPCs for longer durations.

RITA N. LOMASNEY
CONNTAP
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EXPERIENCE

January 1989 to Present	Connecticut Hazardous Waste Management Service, Hartford, CT
December 1990 to Present	Manager, Hazardous Waste Program The Hazardous Waste Program is comprised of two divisions, technical assistance and planning/technical studies. The Manager is responsible for development of updates to the state's hazardous waste management plan, as well as setting direction for and overseeing implementation of an effective pollution prevention technical assistance program for Connecticut business and industry.
January 1989 to December 1990	Assistant Manager, Hazardous Waste Program
March 1987 to January 1989	EEW Management, Inc. , Torrington, CT Provided hazardous waste and hazardous materials consulting services and personal training to small to medium sized manufacturing facilities. Conducted environmental site assessments. Coordinated tank removals and remedial action projects. Coordinated marketing opportunities at trade shows and seminars.
PROFESSIONAL AFFILIATIONS	Past Chair, Board of Directors, National Pollution Prevention Roundtable Licensed Engineer-in-Training, Connecticut Board of Examiners for Professional Engineers and Land Surveyors American Electroplaters and Surface Finishers Society, Hartford Branch
OTHER AFFILIATIONS	Board of Directors, Girl Scouts Connecticut Trails Council

APPENDIX C

REPORT OF DR. JERZY BARGLIK

PPC/KATOWICE

REPORT

WORKSHOP AGENDA

PARTICIPANT LIST

PARTICIPANTS' EVALUATION SUMMARY

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Katowice, 1996-11-25

Final Report
PPC's Training Workshop
October 13-16, 1996 in Międzybrodzie Żywieckie

The workshop took place in a very well equipped camp in Międzybrodzie Żywieckie between October 13 - 16, 1996. The detailed agenda is enclosed to this report. (Appendix no 1). There were 36 participants of the workshop induding three directors from Baltic states, ten representatives of PPC Katowice, eight from PPC Łódź, seven for PPC Opole and two interpreters.
The full list of participants and trainers is enclosed in Appendix 2.
The first event of the workshop was meeting of PPC's directors regarding business plans. The workshop was conducted by Tom Pluta (WEC), Rita Lomasney (Conn TAP) and Sam Perkins (Green TECH Consulting). All participants have received a set of training materials:

- manual,
- hand - outs with exercises for working in groups

All training materials was translated into Polish as well as transparencies.
During all the workshop it was a very interesting discussion. The main topic of discussion was connected with:

- financial and accounting aspects of PPC activities,
- application of Environmental Management Systems in particular Polish and other East European Countries conditions,
- preparation of PPC's bussiness plans.

The workshop was evaluated very high by all participants. More detailed results of the evaluation are presented in Appendix no 3.

Appendices nr 1,2,3
Invoice nr 4/96

PPC TRAINING AGENDA
OCTOBER 13-16, 1996

Sunday, October 13

17⁰⁰ Arrival and checkin

19⁰⁰ *Dinner*

20⁰⁰ PPC Directors meeting regarding business plans

Mondey, October 14

8⁰⁰ *Breakfast*
9⁰⁰ Welcome and Introduction - Tom Pluta, Remigiusz Sosnowski
Self introduction of participants
9³⁰ Overview of the Operation of a US PPC - Rita Lomasney
10⁰⁰ Targeting Your Customer - Rita Lomasney
- Who are your customers?
- What do they need and expect?
- What can I provide?

Group discussion and group exercise
11⁰⁰ *Coffee Break*
11³⁰ Marketing and Outreach - Rita Lomasney
- Setting goals
- Recruiting clients
- Developing marketing materials

Group discussion and exercise

12³⁰ *Lunch*

13³⁰ Selling Pollution Prevention to Businesses - Sam Perkins
- P2 is good business
- P2 and Total Quality Management
- ISO 14001 and Global Competition

14⁰⁰ Sales and Communication
- Getting on site - the first visit
- How do I build rapport, confidence and trust?

Group exercise
15⁰⁰ *Coffee Break*
15³⁰ PPC Barriers to „getting on site" - Rita Lomasney
- What is stopping me from „getting on site"?
- How can I overcome the barriers? Finding the answers

Group exercise and discussion
16³⁰ Company Barriers to Implementing P2 - Sam Perkins
- What stops a company from being profitable?
- Information: technical and financial
- Overview of company cost and accounting systems

18³⁰ *Dinner*

Tuesday, October 15

7^{30} *Breakfast*
8^{30} Company Barriers to P2 Implementation (continued) - Sam Perkins
- Cost Information and Accounting
  - Financial/managerial aspects
  - Conventional and activity based accounting systems
  - Environmental accounting
- Group exercise: Evergreen Plating Company

10^{00} *Coffee Break*
10^{30} PPC Administrative Protocols
- On-site visits
- Reports
- Follow up

Group exercise
11^{30} Project Assessment - Sam Perkins
- Overview: Capital budgeting and financial analysis

Group exercise: Hudson Ice Cream Company
- Identifying costs

13^{00} *Lunch*

14^{00} Group exercise: Hudson Ice Cream Company
- Collecting cost information
- Cash flow measures of profitability

Group exercise
- Evergreen Plating

15^{30} Coffee Break
16^{00} Introduction of evening group exercise
- Hudson Ice Cream Company - Analyzing P2 Options

17^{00} Begin group work

18^{30} *Dinner*
19^{15} Group work continues

Wednesday, October 16

7^{30} *Breakfast*
8^{30} Project Assessment -Sam Perkins
Group presentations
10^{30} Financial Assessment Summary
11^{00} Funding and Staffing - Rita Lomasney
Technical Resources
Group exercise

12^{00} *Lunch*

13^{00} Workshop Summary
- Evaluation

14^{00} Adjournment

Appendix nr 2

THE LIST OF PARTICIPANTS
OF THE PPC's TRAINING WORKSHOP
in alphabetical order

MIĘDZYBRODZIE ŻYWIECKIE
13-16 October, 1996 r.

1. **Leszek ADAMCZYK,** PPC ATMOTERM, Opole, ul. Katowicka 35, tel. 077 542037 , e-mail ATMOTERM.TELBANK.PL

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3. **Leszek BLACHA,** PPC Katowice, Silesian University of Technology, Department of Metallurgical Processes, ul. Krasińskiego 8, 40-019 Katowice, tel. 1554885 w. 272

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12. **Piotr KAPIAS,** PPC Katowice, Institut of Non-Ferrous Metals, ul. Sowińskiego, Gliwice, tel. 032 381968

13. **Agnieszka KWIATOS,** PPC Łódź Voivodship Fund of Environmental Protection and Water Management in Lodz, tel. 042 300309

14. **Tadeusz LADRA,** PPC Łódź EKO - SYSTEM, s.c.,ul. Strycharska 14/219, 93521 Łódź, tel. 042 812003

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34. **George LOMBARDO,** (partly)

35. **J.J. RAO,** (partly)

36. **Barbara PLUTA,** (guest)

Appendix nr 3

Summary of the workshop evaluation
Międzybrodzie Żywieckie
October 13 - 16, 1996

I. Questionnaire

1. Which topics were most useful ?
   Why ?

2. Which topics were less useful ?
   Why ?

3. How will you improve the informations about coming back to work ?

4. Could you name topics of future trainings ?

II. Conclusions

26 participants have given back the questionnaires. The questionnaire could be anonymous but a few participants sign it. Participants suggested that the most useful topic of the workshop is:

- options of financial analysis for Pollution Prevention proposals,
  Marketing aspects of PPC activity,
  Environmental Management Systems,
  Almost all participants could not find any unuseful topics of the workshop.

Participants stated that all topics of the workshop were useful so it will be implemented in the PPC practice.

Future training should deal with:

- using computer systems in PPC activity,
- case studies of concrete waste minimization and cleaner production topics in the world,
- application of Environmental Management Systems especially ISO 14001
- organization of working group in a plant to solve a concrete waste minimization problems .