



2004 Illinois Governor's Pollution Prevention Awards

October 21, 2004

Abbington Distinctive Banquets

Glen Ellyn, IL

**Hosted by:
The Waste Management & Research Center,
a division of the
Illinois Department of Natural Resources**

2004 Governor's Pollution Prevention Awards

For the past 18 years, the Illinois Waste Management and Research Center (WMRC) has worked with the Illinois Governor's office to recognize outstanding pollution prevention efforts in our state. These annual awards are presented to businesses and organizations in Illinois that have successfully reduced the generation of gaseous, liquid, and solid waste. This year 15 Illinois companies and organizations are being honored for their achievements in helping the environment and the economy. Categories in the Governor's Pollution Prevention Awards include industries of all sizes, vendors/suppliers, educational institutions, service organizations, and continuous improvement companies.

The Pollution Prevention (P2) projects honored this year saved the companies and organizations millions of dollars in material and disposal costs. The companies and organizations also prevented hundreds of tons of waste materials from being released into the environment and saved millions of gallons of water from being sent to treatment facilities.

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Crown Cork & Seal USA, Inc.

Aurora

Large Company

The Crown Cork & Seal USA, Inc. facility in Aurora, IL coats and decorates metal sheets for the fabrication of cans and ends. The project implemented was to reduce and eventually eliminate the backwash solvent used on two sheet-coating lines. Prior to implementing the project, Crown used in excess of 23,000 gallons of solvent and disposed of 375,000 pounds of hazardous waste - at a cost of over \$300,000 per year. Crown developed a method for recycling the waste solvent generated so that the material would never leave company property and the risk of contamination from other waste would be eliminated. The purchase of solvent was reduced by nearly 20,000 gallons, and hazardous waste disposal was reduced by 141,000 pounds. In total, the program generated annual cost savings of \$129,000. Crown modified the coaters to allow them to operate without the use of the backwash solvent, and also continues to recycle the small amount of solvent used on the two coaters. As a result, plant-wide disposal of hazardous waste was reduced another 77,000 pounds and total costs decreased another \$71,000.



GM Electro-Motive LaGrange

Large Company

GM Electro-Motive in LaGrange manufactures and rebuilds diesel engines and locomotive components. The facility generates a variety of waste materials from the manufacturing and testing operations including used oils, fluids, paint and solvents, concrete, pallets, scrap wood, cardboard, and paper. These materials are segregated and recycled using an Environmental Management System. GM Electro-Motive has reduced the disposal of caustic liquid solutions by 1200 gallons per year at a savings of \$2,500 per year. Product substitution of xylene with “Simple Green” in engine cleaning reduced the amount of hazardous waste generated and disposed by 2,000 pounds and saved \$1,500 per year. The facility increased the amount of oil recycled by 35 tons and decreased the amount going for secondary fuel at a savings of \$3,500 per year; and eliminated 80 tons of water in sludge that would be sent for disposal offsite saving \$5,000 per year.



Cadbury Adams Rockford

Large Company

Cadbury Adams in Rockford worked with a water treatment company to reduce the volume of brine solution used during the regeneration process of its potable water. After reviewing the materials, analyses were performed to determine what the operating and environmental benefits would be from implementing such a system. An environment evaluation was also conducted which showed that there would be a reduction in water usage, and a reduction in the amount of brine solution discharged to the sanitary sewer system. The final qualifier was that the quality of the softened water would not be diminished. The project was implemented with the purchase of a control system that monitored concentrations of the effluent from the regeneration process and installation of some additional piping for returning the brine solution to the brine tank.



Behr Process Corporation Chicago Heights

Large Company

Behr Process Corporation in Chicago Heights manufactures stains, varnishes, and paints and is committed to meeting and exceeding environmental regulatory requirements whenever possible. Behr Process Corporation is an ISO 14001 certified company. Behr plastic pails and cans are made with post consumer plastics so that they may be recycled. The company has saved approximately \$6,000 by recycling and has diverted approximately 479 tons of recyclable material from disposal. Behr Process Corporation not only prevents waste, but buys recycled too.



Community Unit School District #3 Cuba

Educational Institution

**Community Unit School District #3 (Cuba)
Cuba School** — The Board of Education, the administrators, and staff of C.U.S.D. #3 in Fulton County, worked together to design a building that has been called a “benchmark” school in a small, rural, poor district. Grants were sought for energy efficiency and sustainability. Using the LEED rating system as a guide, the district incorporated as many elements of “green” design as it could afford to build the new Cuba Middle/Senior High School in Cuba, Illinois. Consideration was given to air quality, acoustical comfort, geothermal heat pumps, photovoltaics, recycled materials, additional insulation in the walls and ceiling, energy efficient windows, daylighting, and a possible wind turbine. The district plans to write cross-curricular environmental units of study into its curriculum and apply for future grants to develop natural areas.



Fermi National Accelerator Laboratory Batavia

Service Organization

Fermi National Accelerator Laboratory (Fermilab) is located in Batavia. Fermilab employees proposed and implemented a liquid nitrogen recovery system at D-Zero, a 5,000-ton sub-atomic particle collision detector, which detects particle collisions occurring within the world's largest particle accelerator. Near the collision point, Fermilab uses liquid nitrogen to cool the Visible Light Photon Counter Chips at a temperature of -444 Fahrenheit. The nitrogen cooling system left some of the liquid nitrogen not vaporized, producing liquid exhaust and vaporization in a large vertical heat exchanger outside the D-Zero Assembly Hall. This recovery system will save the laboratory approximately \$43,000 or 207,360 gallons a year in liquid nitrogen, increase the efficiency of the liquid nitrogen system, and reduce the heat load on other cooling systems.



International Truck & Engine Corp. Melrose Park

Continuous Improvement

International Truck & Engine Corp. in Melrose Park produces diesel engines for mid-size trucks and school buses. The company's crankshaft machining line's tapping operation used chlorinated paraffin-based lubricant for the harsh roll-tapping operation. International installed a new flow-through tapping operation that eliminated the toxic lubricant and replaced it with synthetic coolant. Additionally, the company developed a wooden pallet recycling process that eliminated the extra handling and costly labor. The company also was successful in improving the paint booth transfer efficiency by reprogramming the paint robots. This reduced the paint usage, waste paint sludge, air emissions, and energy useage by 21%. A reduction of 2700 gallons of paint and 3500 pounds of air emissions resulted from this change. The cycle time was improved along with the quality. These efforts resulted in a savings of \$330,000 for 2003.



Commonwealth Edison (ComEd) Chicago

Continuous Improvement

Commonwealth Edison (ComEd) and the City of Chicago have teamed up with governmental, labor and community partners to form the Chicago Solar Partnership, a unique private-public partnership. This partnership has facilitated the installation of \$12 million in solar electric systems in schools and public buildings across the city. The combined capacity of the all the solar installations is one mega-watt. The solar electric systems not only provide pollution-free energy, but also help offset a portion of the energy bills of the facilities that house them. The Partnership hopes that these installations raise awareness and understanding of solar energy, and the benefits it can provide. To help Chicago Public Schools bring the lessons of solar energy into the classroom, real-time energy output data from all of the solar systems and a solar-based curriculum is available on the Web at www.chicagosolarpartnership.org.



Nalco Company Bedford Park

Continuous Improvement

Nalco Company in Bedford Park is a specialty chemical company that manufactures a variety of products used for casting of metal parts and ceramic forms. This past year, the plant made process improvements that reduced the amount of wastewater treatment chemicals used by 64%, and reduced the amount of solids in the wastewater by 46%. Nalco also initiated some inventory and recycling projects that reduced waste from the plant by 4.1%. The overall savings from these projects totaled \$764,000. Nalco also became home to a number of creative beneficial reuse projects of idled buildings, providing resources to various governmental agencies. The Local Emergency Planning Committee moved into some empty office space, and three training drills were held in other empty buildings involving the Federal Bureau of Investigation, Drug Enforcement Agency, local Fire Departments, and Chicago area rescue teams.



Caterpillar Technical Solutions Division Peoria

Continous Improvement

Caterpillar's Technology and Solutions Division in Peoria was challenged to create a world-class "virtual engine" simulation tool that would have the accuracy required to bring better combustion technologies to market sooner by reducing the time and expense to evaluate concepts and diagnose problems. A diesel combustion simulation tool was developed and used to predict engine performance and emissions for both near-term and long-term enabling technologies. Through the use of the "virtual engine" model, the team reduced "traditional" engine test cell time from 5 months to 7 days. This resulted in an avoidance of approximately 3000 hours of test cell time. Through the use of the "virtual engine" model, the consumption of nearly 44,000 gallons of diesel fuel was avoided resulting in a reduction of over 7 tons of emissions.



Sherwin Williams - Minwax Flora

Continuous Improvement

Sherwin Williams-Minwax based in Flora, Illinois, is the only site in the country to manufacture Minwax wood stains, topcoats, and waxes of both the oil and water-base variety. Recycling and waste reduction come from the production operation where wash by-products are generated. Minwax instituted an in-house recycling program that used 250 gallon steel totes to help capture the wash by-products in 2003. Minwax has increased its efforts this year, raising the number of lines using this system from two to seven and the number of totes collecting the different family products from eight to seventeen. The amount of wash reused on-site from the tote program is 1.6 million pounds at a cost savings of \$336,000.



GE Healthcare Bio-sciences Arlington Heights

Continuous Improvement

GE Healthcare Bio-sciences, located in Arlington Heights, is a manufacturer of radiopharmaceuticals that are used by physicians in the diagnosis of disease using various imaging techniques. The facility recently has invested over \$667,000 to upgrade an exhaust system and house vacuum system. The new exhaust system has replaced five independent air effluent extraction systems. The exhaust system and house vacuum system have a more efficient filtration and absorber system. The two electrical motors used on the new exhaust have a rated efficiency of 94.5% as opposed to a rated 84% efficiency for the electrical motors that were replaced. The investment has resulted in an 80% reduction in air emissions associated with radiopharmaceutical production. GE Healthcare Bio-sciences was previously known as Amersham Health.

GE Healthcare



Caterpillar Cast Metals Organization Mapleton

Continuous Improvement

Caterpillar Cast Metals Organization (CMO) located in Mapleton replaced a 30-year old proven process with a new technology that reduced air emissions, lowered costs, and improved the health and safety of the workplace. CMO is a gray iron foundry primarily casting engine blocks, engine heads, and cylinder liners. Metal castings are made by pouring molten iron into sand molds, allowing the iron to solidify and cool, and removing the castings from the sand. The outside of the metal casting is formed by the sand mold itself, and sand and resins are combined to make a resin system called Isocure 308/608 in its engine block core-making process. A project was launched to replace this resin system with a better performing and more environmentally safe resin called Isocure 408/808. Through this system, Volatile Organic Matter (VOM) emissions will be reduced by 12.3 tons annually. The expected annual savings are \$810,000, which represents a 20% reduction in sand and resin costs.



Abbott Laboratories

Abbott Park

Continuous Improvement

Abbott Laboratories is located in Abbott Park, IL. Project work undertaken by Abbott last year included:

- A pollution prevention process review tool created to identify and evaluate pollution prevention projects in bulk pharmaceutical manufacturing. The use of this tool on one process resulted in a 39% reduction of hazardous materials, an associated reduction in hazardous air emissions, and a 42% reduction in hazardous waste generated.
- Disposable apparel was replaced with reusable clothing, resulting in 67,000 cubic feet of non-hazardous waste being diverted from a landfill each year for a net savings of over \$460,000.
- Hybrid electric-gas vehicles were introduced into the commercial sales and service fleet. The increased fuel efficiency of the vehicles is estimated to produce a savings of over 7,600 gallons of fuel per year for all sixteen vehicles in the study, for an estimated cost savings of over \$13,500 per year.



Maytag Herrin Laundry Products Herrin

Continuous Improvement

Maytag Herrin Laundry Products, located in Herrin, is a manufacturer of household washers and dryers. In 2004 the company developed an energy conservation project that greatly improved the efficiency of the plant-wide air compressor system and turned it into a “managed” system, which compresses air on demand and at a constant pressure. The project also improved and upgraded current systems and repaired leaks. Total energy savings for the project is 1.8 million kwh (kilowatts hours) per year. Air emissions reductions resulting from this project are experienced at the power plants that supply electricity Maytag. The annual emission reductions are estimated to be:



- Sulfur Dioxide-1.48 tons/yr
- Nitrous Oxide-0.90 tons/yr
- Carbon Monoxide-0.06 tons/yr
- Particulate Matter -0.06 tons/yr
- Carbon Dioxide-584 tons/yr
- Hydrochloric Acid-0.15 tons/yr

Pollution is nothing but the resources we are not harvesting. We allow them to disperse because we've been ignorant of their value.

-- Buckminster Fuller



Notes



Illinois Waste Management & Research Center
One Hazelwood Drive
Champaign, IL 61820
217-333-8940

www.wmrc.uiuc.edu