



Annual Report - 2008

Chemical Control Centre
University of Windsor



**CHEMICAL
CONTROL CENTRE**
University of Windsor

Annual Report Committee:

Chris Busch

Candy Donaldson

Alina Jaworska-Sobiesiak

© 2009, Chemical Control Centre

No part of this document may be reproduced in any form without permission. The operational activities described here cover the time period between January 2008 and December 2008.

Table of Contents

| | |
|--|-----------|
| Executive Summary | ii |
| Introduction | 1 |
| Our Team | 3 |
| Our Facilities | 5 |
| Regulatory Compliance | 6 |
| Existing Programs | 7 |
| Laboratory Safety | 9 |
| Hazardous Materials Acquisitions | 15 |
| Environmental Protection Services | 17 |
| Financial Overview | 19 |

Executive Summary

The Chemical Control Centre continues to support and develop both programs and associated services that facilitate learning, safely. In 2008, the department undertook a strategic planning process to help focus and clarify our role on campus, including the establishment of a new mission statement, values, and guiding principles. This report outlines our programs and services while highlighting some of the new initiatives undertaken by the department within the 2008 calendar year.

Some of the highlights undertaken by **Environmental Protection Services** include the facilitation of a campus-wide hazardous materials audit, improving emergency response and spill mitigation capabilities, development of PCB management policies and procedures, and a review of our third-party contractor validation methodologies.

The **Laboratory Safety, Assurance, and Compliance group** had an extremely successful year, starting with receiving the “Solutions at Work Award of Recognition” from the Campus Safety, Health, and Environmental Management Association (CSHEMA) for the implementation of the institution’s Hazardous Materials Information System. In addition, they lead the development of the institution’s Biological Safety Manual, authored nearly twenty laboratory safety publications, offered numerous training programs, and launched the University of Windsor’s Undergraduate Laboratory Awareness Training Program.

The Chemical Control Centre continues to support programs, undertakes initiatives, and develops policies and procedures related to Environmental Health and Safety for the entire campus while operating within our current financial and operating framework. We look forward to the upcoming challenges related to our current fiscal environment but will continue to undertake new projects and initiatives, across campus, by leverage our strengths, building on our collaborative relationships with our clients, and identifying synergistic opportunities. These efforts will allow us to deliver on our mandate to facilitate learning, safely and efficiently.

Introduction

This report covers the activities of the Chemical Control Centre from January 1/2008 to December 30/2008.

The Chemical Control Centre (“The Centre”) is a service-focused department with expanding campus-wide responsibilities related to both regulatory compliance and environmental health and safety functions. The Centre is responsible for supporting its’ clients safely acquire, handle, store, and dispose of hazardous materials. Hazardous materials are defined as any solid, liquid, or gas that can cause harm to people, other living organisms, property, or the environment. Thereby, through the utilization of our services, clients can ensure that they, and therefore the University of Windsor, meet or exceed the various legislative and regulatory requirements related to hazardous materials on campus. Services are separated into three different groups based on their operational function, including Environmental Protection Services, Laboratory Safety, and Hazardous Materials Procurement and Stockroom Services.

Environmental Protection Services:

This area focuses on providing service, training, information, and advice pertaining to the safe handling, disposal, storage, and spill mitigation of hazardous materials. The group is entrusted with ensuring that the University of Windsor continues to be a responsible steward of the environment.



Examples of the programs operated by Environmental Protection Services, includes: Ministry of Environment Generator Registration Management (HWIN), Waste Manifest Procedures, Laboratory Decommissioning for Hazardous Materials, and Environmental Management, including PCB, biological, radiological, and chemical wastes.

Laboratory Safety, Assurance, and Compliance:

The Laboratory Safety group is responsible for providing training, information, support, and advice pertaining to chemical, biological, radiological, and general laboratory safety. In addition, this group continues to develop and implement specialized training and educational materials targeted at raising awareness of laboratory hazards and reinforcement of institutional policies and procedures.

An example of the programs operated by the Laboratory Safety group, includes: Laboratory Awareness Training for Undergraduate Students, Hydrogen Fluoride Training for End-Users, Compressed Gas Safety, Hazardous Materials Information System Management, and both Biological and Radiological Safety Program Management.



Hazardous Materials Acquisition and Stockroom Services:

This group is responsible for the placement, acquisition, and tracking of all hazardous materials on campus. In addition, they offer a wide range of general laboratory supplies for our clients; for example, cell culture consumables, glassware, and laboratory safety equipment. The acquisition of materials is completed on a cost-neutral basis with individual research and academic laboratories covering the expense incurred by the department to acquire items, including invoice costs and associated shipping & handling expenses.

“The Centre” does not levy any additional fees, mark-up, or overhead on the items purchased on behalf of its clients. In addition, consolidated ordering allows multiple orders to be combined thereby reducing the overall procurement costs.

Our Team



Figure 1: Chemical Control Centre team members celebrating their receipt of a CSHEMA award, including Asma Youssouf, Candy Donaldson, Jerry Vriesacker, Nimisha Agarwal, Chris Busch, and Alina Jaworska-Sobiesiak.

Chris Busch

Mr. Busch is responsible for the management of the department along with the strategic planning, execution, and implementation of new initiatives. He oversees the daily operations of the University of Windsor's Radiation and Biological Safety programs.

Candy Donaldson (Hazardous Materials Technician – Environmental Protection)

Mrs. Donaldson oversees the safe and responsible collection, storage, processing, and disposal of all hazardous materials that are generated in by the University of Windsor's scholarly activities, along with material generated by our administrative departments, such as Student Health and Facility Services.

Alina Jaworska-Sobiesiak (Laboratory Safety Coordinator – Laboratory Safety)

Dr. Jaworska-Sobiesiak is responsible for the University of Windsor's Hazardous Materials Information System (HMIS), including the management of vendor specific material safety datasheets (MSDS) and all reporting requirements stipulated by various regulatory agencies. In addition, she oversees the development and implementation of campus wide laboratory training programs.

Jerry Vriesacker (Customer Service Representative – Hazardous Materials Acquisitions)

Mr. Vriesacker is the primary client contact related to the University of Windsor hazardous material acquisitions, including the placement of client orders, inventory management, and answering both client and vendor requests.

The Centre also employs a variety of part-time staff members who are instrumental in the delivery of our mandate. During 2008, the following individuals were employed at the Chemical Control Centre:

Andrew Benn
Aziz Naeem Khan
Joe Yacoub
Mark E. Saliba
Nimisha Agarwal
Pamela Ovadge
Asma Yousauf

In 2008, the Chemical Control Centre staff and management undertook a strategic planning exercise, facilitated Mrs. Marcela Ciampa (Manager – Learning & Organizational Development), to identify the department’s mission, values, and guiding principles.

MISSION STATEMENT:

“To facilitate a safe environment in the university community through the informative acquisition, distribution, proper handling and disposal of hazardous materials”

VALUES AND GUIDING PRINCIPLES:

Approachable: We are committed to being accessible and to ensure effective communication and understanding.

Collaboration: We believe that working collaborative with our partners is key to a safe university environment.

Expertise: We are dedicated to providing relevant technical knowledge and support.

Safety: We promote and develop safe laboratory practices to support the university community.

Service: We utilize innovative methods to provide effective, timely client focused service.

Our Facilities

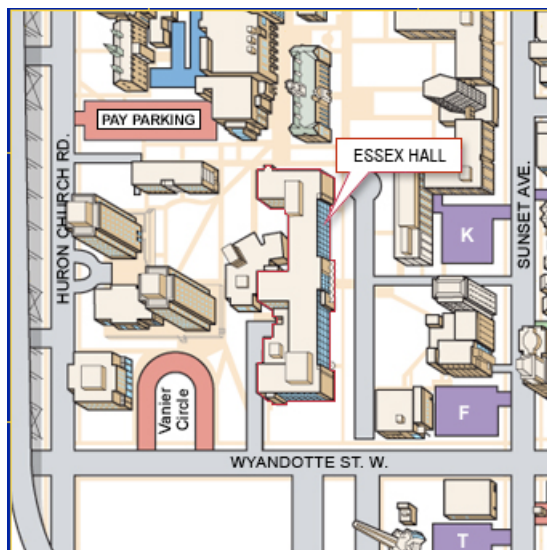


Figure 2: Graphical representation of University of Windsor, including Essex Hall – location of the Chemical Control Centre.

The Chemical Control Centre operates out of the Essex Hall and consists of the following facilities:

- Stockroom Services & Laboratory Supplies Storage
- General Chemical Storage
- Flammable Storage
- Radioactive Materials Storage
- Acid / Base Storage
- Compressed Gas Cylinder Storage
- Cryogenic Liquid Facilities
- Liquid Waste Bulking
- Laboratory Packaging Facilities
- Hazardous Waste Testing Facilities

Contact Information:

In-person: Essex Hall, B-37
P: 519.253.3000 ext. 3523
F: 519.973.7013
E: ccc@uwindsor.ca
www.uwindsor.ca/ccc

Hours: Monday – Friday, 8:30AM – 4:30PM

Regulatory Compliance

The University of Windsor's Chemical Control Centre is responsible for helping both our clients and the University comply with a wide range of Federal, Provincial, and Local legislative and regulatory guidelines; specifically,

Biological Safety Programs:

- Canadian Council on Animal Care
- Health of Animals Act (1990), Canadian Food Inspection Agency
- Importation of Animal Pathogens, Canadian Food Inspection Agency
- Human Pathogens Importation Regulations, Public Health Agency of Canada
- Transportation of Dangerous Goods (TDG), Transport Canada

Chemical Safety Programs:

- Chemical Weapons Convention, Canadian National Authority
- Excise Act, Canadian Revenue Agency
- Hazardous Products Act, Health Canada
- Occupational Health and Safety Act, Province of Ontario
- Ontario Fire Code, Province of Ontario
- Transportation of Dangerous Goods (TDG), Transport Canada

Environmental Protection:

- Canadian Environmental Protection Act, Environment Canada
- Domestic Substances Act, Environment Canada and Health Canada
- Environmental Assessment Act, Environment Canada
- Environmental Protection Act, Province of Ontario

Radiation Safety Programs:

- Nuclear Safety and Control Act, Canadian Nuclear Safety Commission
- Occupational Health and Safety Act, Province of Ontario
- Transportation of Dangerous Goods (TDG), Transport Canada

General Regulations:

- Ontario Ministry of Finance, Province of Ontario
- Controlled Goods and Technology, Public Works of Canada

Existing Programs

“The Centre” currently offers and/or supports a wide range of laboratory safety programs related to Biological, Chemical, Radiation, and Laboratory Safety. These programs have either been established or designed with input from a wide range of end-users and/or department, including Campus Community Police, Office of Research Services, Occupational Health and Safety, Animal Care, and Facility Services.

Environmental Protection Services

- Biological, Chemical, and Radiological Waste Disposal Services
- Compressed Gas Cylinder Disposal
- Environmental Protection Services Training
- Laboratory Decommissioning
- Ministry of the Environment Generator Management
- PCB Waste Management ▲
- Satellite Waste Storage Management ▲
- Spill Response ▲
- University of Windsor - Emergency Response Team
- Waste Manifest Services ▲

Laboratory Safety, Assurance, and Compliance

Biological Safety Focus:

- Institutional Biological Safety Program †
- Biological Safety Cabinet Management

Chemical Safety Focus:

- Institutional Chemical Management
- Chemical Fumehood Certification
- Compressed Gas Inventory Management
- WHMIS *
- Globally Harmonized System of Classification and Labelling (GHS) †

Coffee Break Seminar Series:

- Biological Safety Cabinet Awareness
- Compressed Gas Cylinder Awareness

Radiation Safety Focus:

- Institutional Radiation Safety Program
- Open and Closed Source Radioisotopes

Training Programs:

- Laboratory Awareness Training – Facility Services

Undergraduate Laboratory Safety Training ▲
Compressed Gas Cylinder Training for End-Users▲
X-Ray Safety Training for End-Users ▲
Spill Response Training for Laboratory Personnel †

* - Program managed by the Office of Occupational Health and Safety

† - Denotes new program currently under development

▲ - New initiatives implemented within 2008

Laboratory Safety

SOLUTIONS AT WORK – AWARD OF RECOGNITION:

Chemical Control Centre received the “Solutions at Work Award of Recognition” from the Campus Safety, Health and Environmental Management Association (CSHEMA) for the implementation of the University of Windsor’s Hazardous Materials Information System (HMIS).

The purpose of this award is to promote interest in developing programs that solve or improve specific safety problems at colleges and universities, and to encourage institutions to share ideas or projects that work for them. The award was based on a wide range of criteria including: (1) Reason for selection of problem; (2) Cost of implementation; (3) Method of implementation; (4) Cost effectiveness; (5) Scope of program; and (6) Applicability at other institutions.

HAZARDOUS MATERIALS INFORMATION SYSTEM:

www.uwindsor.ca/hmis



The University of Windsor’s Hazardous Materials Information System (HMIS) provides compliance-based information to support research, teaching, and administrative requirements, including:

- Automated building content reports to facilitate emergency response, planning, and regulatory reporting;
- Inventory reports;
- Emergency contact information; and,
- Real-time (online) access to vendor specific material safety data sheets (MSDS).

We are beginning the initial work to develop a new web-based training program for laboratory end-users on WHMIS/Consumer Product Labels/GHS/Pesticide labels. This program is necessary to address a training deficiency identified within the Hazardous Materials and Environmental Audit (Summer 2008). It is expected that this program will be completed by Spring 2009.

2008 Highlights

- At the end of 2008, the Chemical Control Centre was responsible for managing 4,582 MSDS
- Improved reporting capabilities for Campus Community Police
- Software upgrades to improve our quantitative analysis capabilities

BIOLOGICAL SAFETY PROGRAM:

www.uwindsor.ca/biosafety

The University of Windsor's Biological Safety Committee (UWINBSC) is mandated to fulfill the responsibilities of a Research Institution Biological Safety Committee as described in the most current version of the Health Canada Laboratory Biosafety Guidelines (3rd edition / 2004). These responsibilities include verifying that all work with biohazardous agents carried out at the University of Windsor is in accordance with the safety practices as stated in the guidelines.



Currently, there are seven (7) departments that utilize biological materials and/or require special treatment services by our department, including Biological Sciences, Chemistry and Biochemistry, GLIER, Animal Care Facility, Schulich School of Medicine and Dentistry – Windsor Program, Student Health Services, and the University of Windsor Emergency Response Team.

2008 Highlights

- Addition of the Department of Chemistry and Biochemistry and Schulich School of Medicine and Dentistry - Windsor Program as clients to the Biological Safety Program
- Attended 5th Annual Biosafety and Biosecurity Training Course (Fort Collins, CO)
- Establishment of the University of Windsor Biological Safety Manual
- Biological Safety Certificate management program developed
- Participated in the Ontario Biosafety Group Meeting (Toronto, ON)
- Installation of a new biological waste storage facility
- Approval of first University of Windsor Biological Safety Certificate
- Centralized of biological safety cabinet certification and testing
- Biological spill, incident, and emergency response procedures developed

CHEMICAL SAFETY PROGRAM:

The University of Windsor's Chemical Safety Program is the foundation and strength of the institution's entire environment health & safety program. Our Chemical Safety Program is superior compared to other Ontario post-secondary institutions due to early investments in information technology along with the alignment of campus-wide policies and procedures related to the acquisition of hazardous materials. The Chemical Control Centre has the ability to provide critical data to management on all hazardous chemical agents including inventory records, purchasing patterns, storage locations, audit reports, and electronic safety information. This is accomplished through the utilization of an advanced Scientific Materials Information System. "The Centre's" information system provides management with the ability to query and develop customized reports to address an unlimited number of safety issues.

UNDERGRADUATE LABORATORY AWARENESS TRAINING PROGRAM:

We launched our web-based audio/visual training program to all first-year students within both the Faculty of Science and Engineering who are enrolled in either a chemistry or biology laboratory. The next step will be to develop a “Biology” and “Chemistry” – focused program to replace the general lab awareness program. The general program will be rolled out to all students enrolled in “wet lab” across all faculties within the next few months.

Reporting mechanisms have been developed to allow faculty, staff, and teaching assistants to validate if a student has completed the appropriate laboratory safety training prior to being allowed access to the lab.

HAZARDOUS MATERIALS ENVIRONMENTAL AUDIT:

The University of Windsor contracted LEHDER Environmental Services to conduct a Hazardous Materials Environmental Audit. This audit identified campus-wide areas for improvement, including: (1) addressing training deficiencies related to hazard identification, waste regulations, consumer products, and transportation of dangerous goods (TDG); (2) assessment of designated substances; and (3) development of a respiratory protection program. The audit also identified eighty-three (83) individual departmental level issues related to hazardous materials, water quality, spills, PCB storage and reporting, along with issues pertaining to waste handling, storage and disposal.

The Chemical Control Centre continues to work with various stakeholders to implement solutions to address deficiencies and improve performance related to the utilization of hazardous materials on campus.

LABORATORY SAFETY BULLETINS

In 2008, the Chemical Control Centre authored nineteen (19) different laboratory safety bulletins on a variety of different topics related to laboratory safety (see Table 1). These bulletins are designed to provide general information related to a specific topic and are general distributed online or to specific end-users.

Table 1: Overview of Laboratory Safety Bulletins created by the Chemical Control Centre in 2008.

| Bulletin | Description |
|-----------------|---|
| 2008-01 | Peroxides in the laboratory |
| 2008-02 | Fighting a Class D Fire |
| 2008-03 | Radioisotope Awareness Training |
| 2008-04 | Safe handling of a designated substance - mercury |
| 2008-05 | Safe handling of a designated substance - benzene |
| 2008-06 | Safe handling of a designated substance - isocyanates |
| 2008-07 | Safe handling of a designated substance - lead |

| Bulletin | Description |
|----------|--|
| 2008-08 | Safe handling of a designated substance - silica |
| 2008-09 | Safe handling of a designated substance - vinyl chloride |
| 2008-10 | Safe handling of a designated substance - acrylonitrile |
| 2008-11 | Obtaining Material Safety Data Sheets from your desktop |
| 2008-12 | Workplace Labels at the University of Windsor |
| 2008-13 | Hydrogen peroxide training program |
| 2008-14 | Safe handling of a designated substance - asbestos |
| 2008-15 | Safe handling of a designated substance - ethylene oxide |
| 2008-16 | Safe handling of a designated substance - arsenic |
| 2008-17 | Safe Disposal of Batteries on Campus |
| 2008-18 | Glassware Safety |
| 2008-19 | Glove Box Safety |

DESIGNATED SUBSTANCES

The Laboratory Safety group continues to develop information packages related to designated substances on campus. The goal of the program is to provide general information to facilitate their safe use, including providing information on inventory and audit reports, general chemical information, spill response techniques, development of training program and materials, and methods and procedures required to control exposure. This program will be expanded to align with both the building assessment program and future assessments.

LABORATORY SAFETY MANUAL

We are working on the development of a new laboratory safety manual. The intention of this new resource is to provide laboratory personnel with a single source of information related to laboratory safety. This “resource” manual will include information on a wide-range of topics, including: General Laboratory Safety Principles, Laboratory Ventilation, Chemical Storage, Chemical Hazards, Compressed Gases, Cryogenic Liquids, Hazardous Waste Disposal, Personal Protective Equipment, Equipment Safety, and Physical Hazards.

2008 Highlights

- Hydrogen fluoride (HF) training and emergency response program implemented
- Compressed gas cylinder safety training program developed
- Hazardous Materials Audit
- Laboratory Safety Manual under-development (est. completion Spring 09')
- Two coffee-break safety seminar sessions offered
- Undergraduate Laboratory Awareness Training Program launched
- Dr. Alina Jaworska - Sobiesiak attended a one day course on the new Global Harmonized System (GHS) and 2-day Laboratory Safety Short Course
- Installation of Class D Fire Powder kits
- Received CSHEMA “Solution and Work Award”
- Presented at CHEMA Conference (St. Louis, MO)

RADIATION SAFETY PROGRAM:

www.uwindsor.ca/radiation

The University of Windsor's Radiation Safety Program is comprised of three distinct initiatives overseen by the University of Windsor Radiation Safety Committee, including Radiation, Laser, and X-Ray Safety (Figure 3). "The Centre" is responsible for the day-to-day administration of the program, including acquisition, usage, storage, and disposal of all radioisotopes.

The Radiation Safety Committee has partnered with the Office of Research Services to implement a new electronic Research Services Office (eRSO) for the management of all certifications on campus, including radiation related permits. The eRSO allows researchers to submit applications for an institutional permit, view the status of their applications, and access certifications from their desktop.

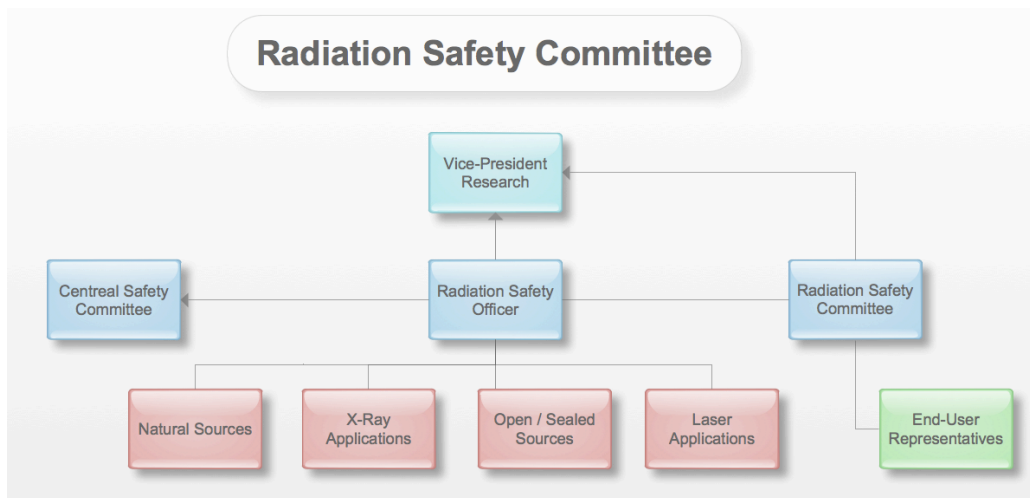


Figure 3: Organizational Structure of the University of Windsor's Radiation Safety Committee

OPEN AND SEALED SOURCES:

The number of individuals who utilize the University of Windsor's Personal Monitoring Program (dosimetry) has increased from 42 to 52 users primarily due to our expanded X-Ray Safety Program, including teaching applications within the Faculty of Engineering.

The number of licenced locations has increased to eighteen (18) within Biological Sciences, Essex Hall, and GLIER. This total includes the addition of eight new permits to facilitate increased experimentation in both life sciences and environmental research. We acquired radioisotopes on twenty-five separate occasions representing over 1,200 MBq of radioactivity during the last twelve months (see Table 2). The total amount of radioisotopes held in inventory across campus has decreased to less than 160 MBq. Our licenced laboratories continue to generate radioactive waste that is processed by our Hazardous Materials Technician. Depending on the isotope utilized, the waste material

is either held under our “Delay-and-Decay” program or transferred to a licenced third-party contractor for long-term retention.

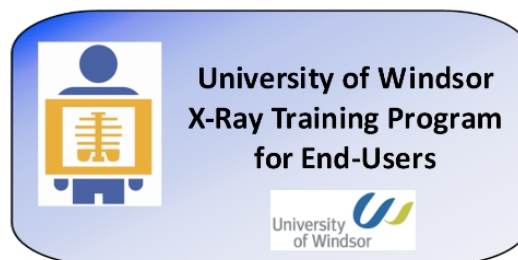
Table 2: Annual amount (MBq) and frequency of radioisotope acquisitions for 2008.

| Isotope | 2007 | | 2008 | | % Change | |
|--------------|-------------|-----------|-------------|-----------|-------------|-------------|
| | MBq | # Orders | MBq | # Orders | MBq | # Orders |
| C-14 | | | 74 | 2 | | |
| H-3 | 46 | 2 | 37 | 1 | -20% | -50% |
| P-32 | 2873 | 38 | 1141 | 22 | -60% | -42% |
| S-35 | 81 | 2 | 85 | 2 | 5% | 0% |
| Total | 3000 | 42 | 1263 | 25 | -75% | -92% |

X-RAY SAFETY PROGRAM:

www.uwindsor.ca/xray

In collaboration with the Centre for Teaching and Learning, we developed a web-based training program for all individuals who utilize an X-Ray generating device. Individuals must successfully complete this training program prior to using an X-Ray device as per Ontario X-Ray Regulations.



This training program consists of ten (10) separate modules, including the following: Structure of matter, Understanding Radiation, Radiation quantities and units, Biological and health effects of exposure to x-rays, Fundamentals of Electricity / X-Rays: radiation made by machines, Radiation detection, Scattering and attenuation of x-rays, Radiation protection: principles and practice, X-Ray Systems, and Internal policies and procedures.

In 2008, we had seventeen (17) individuals complete this training program.

LASER AND LASER SYSTEMS:

www.uwindsor.ca/laser

Dr. Joel Gagnon recently joined the Radiation Safety Committee. He will be working with the committee to help in the development of a laser safety program manual.

| 2008 Highlights |
|---|
| <ul style="list-style-type: none"> Development of a x-ray training program for end-users Expanded terms of reference to include laser and x-ray end-users Reduced volume of radioisotopes used on campus |

Hazardous Materials Acquisitions

ACQUISITION AND INVENTORY MANAGEMENT:

“The Centre” places all orders for hazardous materials and provides stockroom services for our clients. In the last twelve months, we have processed materials from a wide range of substances, including infectious substances, life science reagents, and extremely toxic chemical compounds (see Table 3 and Table 4). We also provide assistance to our clients with the acquisition of regulated and specialty chemicals, such as controlled substances and narcotics, which require the acquisition of a wide variety of permits. We continue to adjust our inventory holdings to reflect the needs of our existing and future clients.

Table 3: Departmental metrics related to the acquisition of materials for 2008.

| Metric - Purchasing | 2007 | 2008 | % Change |
|--|-------------|-------------|-----------------|
| Total number of orders filled | 5,841 | 5,195 | -11.1% |
| Total number of purchase orders released | 1,467 | 1,433 | -2.3% |
| Average number of distinct items per order | 6.39 | 5.69 | -11.0% |
| Average number of items per order | 6.63 | 6.13 | -7.5% |
| Total number of items received | 119,852 | 191,650 | 59.9% |
| Number of distinct vendors | 149 | 214 | 43.6% |

Table 4: Chemical Control Centre’s sales metrics for 2008 (CDN\$)

| Metric - Sales | 2007 | 2008 | % Change |
|--|----------------|----------------|-----------------|
| Total number of distinct customers | 126 | 134 | 6.3% |
| Total number of issues (transactions) | 6,076 | 6,102 | 0.4% |
| Average number of distinct items per order | 7.04 | 6.31 | -10.4% |
| Total sales | 777,347 | 689,088 | -11.4% |
| Sales - Research | 652,093 | 582,091 | -10.7% |
| Sales - Administration / Academic | 114,992 | 97,007 | -15.6% |
| Sales - External | 4,827 | 3,698 | -23.4% |

INFORMATION SYSTEMS:

The primary role of “The Centre” is to ensure that the University of Windsor and its researchers meet or exceed the regulatory requirements related to hazardous materials. The University of Windsor’s Scientific Materials Information System (SMIS) places the University at the forefront of Chemical Safety compared to other Ontario Universities by providing the ability to access audit, safety, and financial information for every hazardous item on campus. We continue to invest in improving our management system to increase the efficiency of our operations and to address client concerns; examples include, the development of a new modules, customized report generation, and electronic client notification tools.

CONTROLLED SUBSTANCES:

The University of Windsor recently received a licence from Health Canada to be a licensed distributor of controlled substances. This was completed to facilitate our expanding life science and medical research programs.

In 2008, we upgraded our security systems within our chemical storage vaults to allow continuous monitoring by Campus Community Police. New reporting functionality within our management system allows for centralized regulatory reporting of both controlled and regulated substances, such as drugs, radioisotopes, and ethanol. Individual researchers are now provided with electronic transactional details to address regulatory compliance issues and allow for the elimination of time consuming laboratory based record keeping.

2008 Highlights

- Received our first licensed distributor of controlled substances licence
- Upgraded facility security systems
- Improved non-business hour facility access to clients
- Responded to Environment Canada’s Chemical Challenge – Batches 4 - 7

Environmental Protection

HAZARDOUS WASTE DISPOSAL SERVICES:

The Chemical Control Centre disposed of 2,467 KG of hazardous solid waste along with 24,200L of liquid waste (see Table 5). Hazardous waste is collected from a wide range of faculties and administrative departments, including Science, Engineering, Visual Arts, and Facility Services. Ms. Donaldson (Hazardous Materials Technician) has established a standardized schedule for the transportation of hazardous waste from our clients outside of Essex Hall. This initiative reduces the amount of waste that could be improperly stored across campus. Furthermore, we have worked with Facility Services to ensure that all waste is properly packaged and transported in accordance with the appropriate legislation (TDG).

Table 5: Type, volume, and/or mass of hazardous materials disposed by the Chemical Control Center in 2008.

| Description | Total Qty | UOM |
|--|-----------|-----|
| Non - Halogenated Solvents (< 10% Water / Solids) | 600 | L |
| Mixed Halogenated Solvents (> 10% Water / Solids) | 6600 | L |
| Lab Pack Organic | 220 | KG |
| Lab Pack Inorganic | 2.04 | KG |
| Acids with Heavy Metal | 8400 | L |
| Air & Water Reactive (minor volumes) packaged in pails | 20 | KG |
| Paint 25% Sludge | 165 | KG |
| Oil (< 10% Water / Solids) | 1600 | KG |
| Pathological | 300 | KG |
| Photo-processing wastes | 8600 | L |
| Waste petroleum distillates | 160 | KG |

“The Centre” continues to act as an environmental steward to ensure that the University disposes of materials in a socially and economically reasonable manner. This includes working with our clients, across campus; to develop a standardized mechanism for the disposal of all hazardous waste generated on campus. “The Centre” will now assume responsibility for the disposal of any hazardous waste that is generated on campus, including Facility Services. This ensures that the material is handled, transported, and disposed of in accordance to the applicable environmental regulations. Furthermore, it ensures that individuals who handle hazardous waste have the appropriate background and training; thereby, reducing the potential for injury to our staff.

Our goal is to provide cost-effective and environmentally responsible waste management on campus. To accomplish this goal we continue to work with various

stakeholders to identify mechanisms to reduce the quantity of waste materials generated by their operations. These process improvements ensure that items are disposed of appropriately while reducing the risks to people, property, and equipment.

SPILL RESPONSE PLANNING

University of Windsor's Hazardous Materials Spill Response Guidelines was developed, in collaboration with Occupational Health and Safety and Campus Community Police, to provide researchers, laboratory personnel, staff, and faculty with a common reference pertaining to the clean up of a wide variety of spills that may occur on campus, including chemical, biological, and radiological spills.

This program will be supported by the development of a web-based training program for the entire campus and supplemented by one-day hands on "advanced spill response" training program to be offered to our hazardous material leaders, whom are still to be identified.

The institution has also initiated negotiations with a third-party contractor to provide on-site emergency response capabilities to help assist in the case of a chemical spill.

PCB MANAGEMENT PROGRAM

The department led the development of the University of Windsor's PCB management policy and guidelines (EHS-2008-01). This policy outlines the management of PCB-contaminated waste materials generated in laboratories, other academic areas, and facilities services operations.

2008 Highlights

- Candy Donaldson and Chris Busch attended a two-day course on Environmental Health and Safety Legislation and Reporting Requirements
- Established Spill Response Committee and Spill Response Guidelines
- PCB Management Policy developed in collaboration with stakeholders
- Implemented campus-wide "Disposal of Hazardous Materials" training (class based)
- Developed Standard Operating Practices and Policies on: liquid nitrogen handling, cyanide destruction; bulking liquid wastes; and drum testing
- Autoclave Procedures Poster created
- Participated in Fire Simulation and Incident Command Training
- Lecture cylinder disposal project completed
- Emergency Response Action Plan (ERAP) developed
- Satellite waste collection procedures implemented

Financial Overview

“The Centre” is responsible for two separate business centers, including an operational and “flow-through” account. Our operating account is utilized for the daily operations of the department including salaries, supplies, capital expenditures, and waste management. Our flow-through account is designed to be a revenue neutral account that is solely utilized for the recovery of expenses associated with the acquisition of all hazardous materials acquired on campus.

The level of funding provided from the University, over the last two years, has kept pace with our expanding operating costs associated with our programs, including hazardous waste disposal and software licensing fees.

2008 Highlights

- **Staff Development:**
 - “Effective Presentation Skills”
 - “Working More Effectively With our Clients: Meeting Their Needs and Managing Their Expectations”
 - Strategic Planning (facilitated process)
 - “Working in a Diverse Environment: Enhancing Cross-Cultural Communication”
- **Memberships:**
 - ACHMM (Academy of Certified Hazardous Materials Managers)
 - CSHEMA (Campus Safety Health and Environmental Management Association)
 - CRPA (Canadian Radiation Protection Association)
 - ABSA (American Biological Safety Association)
- Mrs. Candy Donaldson participated as the University of Windsor’s Loaned Representative to the United Way