CASE SAFETY SERVICE OPERATIONS OF THE DOES

ANNUAL REPORT

W. David Sedwick, Director
Marc Rubin, Assistant Director
Felice Porter, Report Editor and Departmental Auditor

FISCAL YEAR 2005-2006

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INTRODUCTION

This report is submitted to the President and designated members of the senior administration of Case Western Reserve University (CASE), as required by the Laboratory Safety Committee (LSC) Operating Guidelines. The report summarizes the activities of the Safety Services branch of the Department of Occupational & Environmental Safety (DOES) at the University. Its contents cover the period from July 1, 2005 through June 30, 2006.

LICENSES/ REGISTRATIONS

CASE maintains certificates of registration through:

- The Department of Transportation (DOT)
- The Ohio EPA for Hazardous and Infectious Waste
- The United States Department of Agriculture (USDA) & Center for Disease Control (CDC)
- The Department of Commerce.

REGISTRATION #	CERTIFICATE OF REGISTRATION	EXPIRATION DATE	PURPOSE
062106-554-061O	US DOT Research & Special Programs	6/30/2007	Hazardous Waste Transport
18-G-00351	OEPA Generator of Infectious Waste	12/4/2006	Infectious Waste
A20041118-0009	USDA High Consequence Agent Program and CDC Select Agent Program	11/18/2007	Animals/ Plants and Humans/ Bovine Spongiform Enchemlopathy (Prospective)

- Wolstein Research Building, 2103 Cornell Road, Cleveland, OH
- Louis Stokes Cleveland Veterans Affairs Medical Center, 10701 Wade Park Blvd., Cleveland, OH
- MetroHealth Medical Center, 2500 MetroHealth Dr., Cleveland, OH
- Cleveland Clinic Foundation, 9500 Euclid Ave., Cleveland, OH

The following premises are registered as generators of infectious waste: DeGrace (Biology),

and staff appointed by the President to guide University programs in the safe use of chemical &

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The 2005-2006 LSC membership is listed below. The President of the University appoints the voting members to this Committee. The committee is also aided by input from ex-officio (non-voting) and visiting members (non-voting).

VOTING MEMBERS

Morris Burke, PhD. Professor Dept. of Biology Millis 109 Term Expires: 9/9/2007	Clive Hamlin, PhD. Associate Professor Dept. of Pathology Pathology 204 Term Expires: 9/9/2007 Chairperson: 9/9/2007	David Samols, PhD. Professor & Chairman of CASE Biosafety Committee Dept. of Biochemistry HG Wood 475 Term Expires: 9/9/2007	W. David Sedwick, PhD. Professor & Director of DOES Dept. of Medicine Service Building, 1st Floor
Yu-Chung Yang, PhD. Professor Dept. of Pharmacology HG Wood 348 Term Expires: 9/9/2007	William Durfee, DVM Asst. Professor & Director Dept. of Veterinary Research Services Animal Resource Center Term Expires: 9/9/2007	Anna-Liisa Nieminen, PhD Professor Dept. of Anatomy Wolstein 3134 Term Expires: 9/1/2007	Christina Hirsch, PhD Asst. Professor Dept. of Infectious Disease BRB 10 Floor Term Expires: 9/1/2007
Thomas Blanchard, PhD. Associate Professor Dept. of Pediatrics Horwitz Tower 8414 Term Expires: 9/1/2007	Thomas Gray, PhD. Asst. Professor Dept. of Chemistry Millis 418C Term Expires: 9/1/2008	Andrea Romani, PhD. Asst. Professor Dept. of Physiology/ Biophysics Med East 547 Term Expires: 9/1/2008	

EX-OFFICIO MEMBERS

Kenneth Basch Vice President of Campus Planning and Operations Adelbert 329	George Cadwallader Director of CASE School of Engineering Office of Administration & Budgets Nord 504	Kenneth Klika, PhD Asst. Dean & Director of Facilities Management & CASE School of Arts & Sciences Crawford 718
Carol Dietz Director of Facilities Management & CASE School of Engineering Nord 502	Richard Jamieson Vice President of Campus Services Crawford 215	Kimberly Volarcik Director of Research Administration Sears Library
Marc Rubin Assistant Director & Chemical Safety Officer of DOES Safety Services Service Building 1		

The clearance program has been expanded to incorporate both laboratory equipment and e-Waste. As a result, the SOP for this program has been rewritten. The SOP yearly review was delayed to accommodate these changes. Additionally, discussion was held with General Accounting to see if the existing University Disposal Form could be streamlined to incorporate the needs of DOES, Plant, and Faculty.

HAZARDOUS WASTE

LSC AUDIT COMMENT

The Chemical Hazardous Chemical Waste program is a large program that has been in operation for a number of years. The strength of the program is its record

LABORATORY WASTE FACILITIES

LSC AUDIT COMMENT

The program was found to be operating well, and no suggestions for improvement were made.

LICENSING STATUS

LSC AUDIT COMMENT

Required licenses were current, except for the Ohio Department of Commerce Transportation license, which was under renewal and paid. Training manuals lacked renewal or expiration dates.

SSOF RESPONSE

All licenses are paid and up to date. Photocopies are displayed in a hanging folder by the front of the DOES office for public inspection. Some licenses are biannual such as the biohazardous waste license. This license comes up for renewal December 2006. Most licenses are annual and are renewed several months in advance of expiration. Additional to licenses is insurance

Thirty protocols were audited and all were in order, excepting one, which lacked the required DOES signature. Three investigators were “past due” for safety training.

SSOF RESPONSE

The carcinogen protocol has been modified to allow DOES to sign off in the absence of Dr. David McCoy, the Director of Environmental Health Sciences. With the appointment of a new chairman in EVHS, more then just one reviewer will be assigned to assist with this process. At times, the DOES holds back signature pending certain training requirements as noted above. If a protocol is received and the investigator or the staff that will be using the carcinogen does not have current training, the protocol is held until training has been completed.

SELECT AGENTS

LSC AUDIT COMMENT

The file of an employee, involved in BSL3 work, was chosen at random and found to be current regarding training, fingerprinting, and facility access. Select agent current-member status, committee guidelines for BSL3 facilities, and monthly inventories were all complete and in good order.

WEBSITE ACCURACY

LSC AUDIT COMMENT

Several programs have revision dates of 2003, two have revision dates of 2004, and one, Safety Clearance Protocol and Request Form, has no revision date. All links on the site are valid and in working order.

SSOF RESPONSE
The entire website is frequently reviewed document by document. As errors are found changes are made.

SUMMARNSE SELECT AGENTS

Internal audits are conducted to support program effectiveness and efficient operation. These audits have resulted in several program enhancements.

INTERNAL AUDITS

Chemical Hygiene Plans
Training
Biohoods
Hazard Communication Plan
Indoor Air Quality
Clearances
Hazardous Waste
Website Accuracy
Research Protocols
DOT Shipments
Select Agents
Liaison Program
Plant Safety Programs
Exposure Control Plans
Chemical Hoods
Bloodborne Pathogens
Industrial Hygiene
Respirators
Regulated Chemicals
Incidents
Inspection Reports
Infectious Material Shipment
Laboratory/ Waste Facility
License/ Registration
Physical Safety Programs
SOP Reviews

This year, in response to internal audit findings, Safety Services continues to improve its procedures and programs.
Internal Audit of the following Radiation Safety Program was conducted during this fiscal year:

LABORATORY INSPECTIONS
Recommendations

- Ensure that laboratories in each building are consistently inspected annually. The same laboratories were not inspected each year.
- Ensure inspection reports are returned promptly.
- Ensure follow up of violations on inspection reports.
- Ensure that inspection reports are signed and dated by Principal Investigator (PI).
- There is a great fluctuation in the number of laboratories inspected each year. Ensure that the total numbers of laboratories in each building are inspected consistently thereby yielding a more constant total.

SSOF Response

In the past, there has been debate as to whether or not to inspect areas and rooms not designated as laboratories. As a result, some year's inspections contain offices, mechanical spaces, and other non-laboratory areas and other years do not contain these areas. DOES has made a decision to stick with complete building inspection. As a result, the variability of the rooms inspected should be limited in the future to areas that change as a result of construction. This will add consistency to this aspect of the inspection program.

One of the challenges of any inspection program is to obtain a level of awareness and urgency consistent with the need to meet regulatory requirements. Laboratory investigators and staff are involved in completing their work. As a result, extra efforts must be made to make them aware of the need to complete the inspection forms and return them. DOES is always developing ways and means of educating laboratory staff and investigators to increase their level of awareness. The DOES has seen great increases in this aspect of the program over the last 15 years. We expect this issue to wane but never cease.

CHEMICAL PERSONNEL FILES

Recommendations

- Ensure that exams are graded.
- Ensure that personnel are current in training
- Ensure that follow up correspondence is placed in the personnel file.

SSOF Response

- Step one of correction will be to compare the electronic database to the audit. This will allow us a first pass at determining who is still here. Any issues related to those files identified as active will need immediate action.
- Step two will be conversion of the online tests to a self-grading system.
- Step three will be the formulation of a filing system that streamlines the program so that these issues do not repeat.

CHEMICAL HOODS AUDIT

Recommendations

- Ensure that all standard operating procedures are current. Need to update Fume Hood Certification Testing SOP and ANSI/ ASHRAE Fume Hood Testing SOP. The SOP for Fume Hood Face Velocity Testing must be dated.
- Ensure that hoods in each building are certified annually.
- Ensure timely repair of hoods that are used frequently.
- Ensure follow up of incomplete repairs.
- Ensure that hood survey are signed and dated by reviewer.
- Ensure that extra comments are explained.
- Since 776 hoods were certified in 2003 and only 456 hoods in 2005, ensure that all hood certifications are made current for 2006.

SSOF Response

- The chemical hood SOP was updated.
- A button was added to the form so that follow up on incomplete repairs would be documented.

The above listed changes were made prior to the departure of the individual running this program. All chemical hoods on campus have been ASHARE tested once at this point. DOES readjusted its goals and objectives to meet the new environment of the University. The result has been a reduction in the level of service in this program area, which will be reflected in next years audit.

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SAFETY SERVICES OFFICE (SSOF)

STAFFING

The SSOF operates with the following staffing:

Director (1)
Engineer (1)
2nd shift Specialist (1)
Department Assistant (1)
Part time Position (1)
Quality Assurance Specialist (1)
Associate Director (1)
Specialist Positions (3)
Student (1)
Plant Safety Specialist (2)
Loss Prevention Specialist (1)

Four staff members of the SSOF left CASE this fiscal year. Safety Services continues to recruit individuals to Specialist positions to improve the Department's expertise and provide for more flexible response to emergencies and other issues. The SSOF Staff is qualified to support and maintain the Safety Services Program. One Specialist position was filled for Safety Services during the past year. This individual has an Environmental & Occupational Health background.
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LAUNDRY PROGRAM

To ensure that laboratory coats and uniforms are laundered regularly using the appropriate temperatures for disinfection, the Laundry Program was developed. Laboratory coats and uniforms are laundered by Merchants Towel Services, a private dry cleaning contractor. This service provides an alternative to domestic and public laundry cleaning. It is strongly recommended that researchers and their personnel use the service on a monthly basis. Currently, 100 researchers utilize the service monthly, cleaning an average of five pieces each month.

DOES EMAIL

The DOES Email hotline (does@case.edu) has become a frequently used safety resource. Since implementing the hotline, the number of inquiries and safety concerns reported from CASE personnel continues at an average of eleven emails per day. This email communication has resulted in improved follow-up of issues reported.

DOES WEB SITE

The DOES home web site (http://does.case.edu) provides integrated web-based access to department services. Information on training and retraining classes, as well as DOES safety manuals are available on-line. The DOES web site is updated regularly. Over the past year, through this resource, DOES has provided researchers with the following new services:

- Online Chemical Hood Service Request Form
- Memo for No Food and Drink in CASE Laboratories
- Contractor Safety Awareness Training Outline
- Hood Memo for No Food and Drink in CASE Laboratories

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- Frantic over Finals? Some Stress-Busting Tips from DOES
- Spring Cleaning for Safety's Sake
- Quiz: Know Your Role
- Inspection Reports: Return Them Promptly
- Construction Safety: A Necessary Precaution
- Ergonomic Safety Program at DOES
- A Few Building Safety Coordinator Training Safety Reminders
- Using Your "Blue Bins" Properly
- Holiday Decorations: Play It Safe
- Laboratory Equipment Repair Service
- Allergic to Latex?
- Laboratory Equipment Repair Service
- Lab Relocation Advice
- Lab Safety Manual, Retraining Slides and Exam--All Now Available at does.case.edu
- Safety Questions? Login to does.case.edu
- Eating Food in the Lab—A Dangerous and Illegal Habit
- Compliance Issues: Reminders
- Safety Plans: Does Your Lab Need a Chemical Hygiene or Exposure Control Plan?
- Reporting Accidents, Near-Misses and Incidents to DOES Immediately
- Proper Disposal of Your Empty Chemical Bottles
- Laboratory Surveys: When Do They Need to Be Performed?
- Where is DOES?
- Volunteer/Minors/International Dependent Policy: Reminders
- Fall Preparations—Is Your Lab Ready for the Fall Semester?
- Lab Safety during Pregnancy
- Chemical Spill Response

The Newsletter is available to all campus faculty, staff, and students on-line and is distributed as a hardcopy to all principal investigators and new employees at orientation.

EMPLOYEE COMPLIANCE COMMITTEE

The Employee Compliance Committee (ECC), comprised of representatives from departments responsible for hiring laboratory personnel (Human Resources, Student Employment, Kelley Temporary Services, Health Services, and Medical School), was formed to improve tracking of University employees for training and safety in general. During this fiscal year the University Compliance & Risk Management Committee requested an update from the Employee Compliance Committee of the Compliance Issues that were addressed. Compliance Issues addressed are listed in the table.

YEAR	COMPLIANCE ISSUES
2002	Procedures developed to properly track faculty, staff, and students upon hire for training and screenings Procedures developed to tract job status changes
2003	Identified various hiring avenues HIPAA (Social Security Numbers & Identification Numbers Contractor Safety Training Plant/ Custodial Safety Training Laser Safety Program
2004	Temporary Employees Hepatitis B Shots

	DOT/ IATA Noise/ Light Assessments Select Agents Program Protocol Compliance
2005	Training Volunteer/ Minor/ International Dependent Policy (High School Students) Summer Programs New Hire Exposure Form
2006	New Faculty Arrival Checklist Faculty New Hire Concerns Track University Vehicle Use

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LABORATORY SAFETY TRAINING

Laboratory Safety Training is given to all personnel that work in laboratories. Several specialized Laboratory Safety classes for specific target groups included medical and dental students, Macromolecular Science and Chemical Engineering personnel, and the NYSP, SPUR, SURP, Upward Bound, and Equinox Summer Programs.

BLOODBORNE PATHOGEN TRAINING (BBP)

Materials containing and/or likely to contain Bloodborne Pathogens are widely used in CASE laboratories. BBP training included compliance awareness and implementation of required vaccination and health monitoring programs.

BSL3 TRAINING

Extensive training and record keeping is required for Select Agents used on CASE's campus. A training course was created for individuals who enter the BSL3 facility to use these agents.

DOT/IATA SHIPPING TRAINING

Training of personnel planning to ship materials is required every 3 years for each specific type of material. Training in non-flammable gases, and aviation-regulated materials has also been conducted.

RESPIRATOR TRAINING

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- Lockout/ Tag out
- Workplace Cleanliness
- Hot Work Permits
- Powered Industrial Pallet Jacks
- Powered Industrial Lift Truck

These sessions are scheduled so that all shifts can be accommodated. Three training sessions were developed and offered for Plant personnel every month, training an average of 60 personnel.

FACILITIES AND EQUIPMENT

CASE administration and the LSC ensure that all facilities, equipment, and personnel are available and adequate for the safe operation, storage, and disposal of hazardous material. The SSOF is also responsible for reviewing regulated safety infrastructure and inspection of all facilities and equipment, where chemical and biological materials are used.

Facilities that are available at CASE for the use of hazardous materials include:

AW Smith	Bingham	BRB
Bishop	Bolwell	DeGrace
Glennan	Hanna Pavilion	HG Wood
Kent Hale Smith	Med East	Millis
Olin	Pathology	RBC
Rockefeller	Service	Wearn
White	Wickenden	UCRC II
VA Hospital	MetroHealth	CCF- Walker
Wood Research Tower (RT)	Wolstein Research Building (WRB)	

LABORATORIES

CASE Safety Service programs monitored approximately 1200 laboratories. These laboratories are located in four hospitals, the CASE Quad and the Medical, Nursing, and Dental School facilities. All laboratories are equipped to use hazardous material and specialized equipment. Laboratories typically include chemical hoods, meters, analytical detection and measurement equipment, waste receptacles, and decontamination supplies.

SAFETY SERVICES OFFICE

Safety Service's facilities and equipment are located in the Service Building (1st Floor), Medical School (DOA990), Millis Science Center (G35) and the Wolstein Building (1103).
PROGRAM OFFICE:

Service Building (1st Floor)-Program offices & Conference Room:

State-of-the-art computer hardware and software are crucial to handle the amount of data required to ensure efficient and quick access to records in the SSOF. The Smart Board System augments the in-house training program, which allows our trainers to directly demonstrate the use of the on-line database and training materials and provides direct access to library services and campus maps during staff meetings and emergency responses.

Chemical Laboratory:

Service Building (1st Floor):

The SSOF is located in the Service Building on the 1st Floor at 2220 Circle Drive. The Safety Services division of DOES operates a laboratory equipped with industrial hygiene equipment, chemical-hood sampling equipment and cylinders, mercury vacuum equipment, respirator fit-test equipment, and spill and emergency response supplies. Equipment is also available for quantification of contaminants in air samples for odor responses, EPA audits, and identification of unknown chemicals.

HAZARDOUS WASTE FACILITIES:

Facilities are located in the 1st floor parking area of the CASE School of Medicine, 1st floor of the Wolstein Research Building and the ground floor of the Millis building. All facilities contain a processing area and a storage area.

MEDICAL SCHOOL WASTE FACILITY (DOA990)

This facility has a separate office and process/storage room for chemical material and disposal activities. This room has a filtered air exhaust system. It also has a chemical and walk-in hood, air monitoring equipment, and emergency response equipment.

MILLIS WASTE FACILITY

This waste facility is located on the ground floor in Millis G35. It is directly across the hall from the Fisher Scientific Chemical Stock Room. The waste facility has an office, a processing area, and a storage area. The waste storage area has shelving and flammable storage cabinets. The processing area has a walk in hood, chemical hood, and emergency response equipment. The office also has an emergency phone.

WOLSTEIN WASTE FACILITY

This facility has an office and process/ storage area for hazardous material and disposal activities. This area is maintained at negative pressure relative to the adjacent hallway. The waste facility contains spill supplies and a computer. Available equipment allows access to web-based databases in the event of a chemical or biological spill. The area also contains a chemical hood, walk-in hood, and meters for environmental monitoring.

ANIMAL RESOURCE CENTERS (ARC)

Animal care facilities are located in the Med East, Bolwell and Wolstein Research buildings. Conventional animal care facilities are available in the Animal Resource Centers and are used by researchers to conduct animal studies with radioactive materials. A variety of animals (mice, rats, hamsters, rabbits, ferrets & large animals such as sheep, dogs, pigs) are housed in one facility. The Bolwell and Wolstein Facilities predominantly house mice. Contaminated items are

Pulse Check Pump Module	710466	G1-5713-F99	Annually	Out of Service
Pulse Check Pump Module	710466	G1-5712-F99	Annually	Out of Service
Pulse Check Pump Module	710466	G8-15922-L01	Annually	Out of Service
Pulse Check Pump Module	710466	G1-5709-F99	Annually	Out of Service
Pulse Check Pump Module	710466	G1-5710-F99	Annually	Out of Service
Quest Technologies Sound Level Meter	2900	CDD010048	Annually	3/24/2006
Quest Technologies Sound Calibrator	QC-10	QID020090	Annually	3/24/2006
Quest Technologies Octave Band Filter	OB-100	HWD020018	Annually	3/24/2006

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SAFETY SERVICES PROGRAMS

GENERAL COMMITMENTS AND SERVICES

The SSOF is meeting its commitments to conduct programs in compliance with local, state, and federal regulatory programs. Regulatory compliance areas managed include DOT and IATA for transport of goods, all EPA RCRA programs for environmental chemical releases and waste disposal, all OSHA programs for employee safety, and NFPA fire code audit, and program development. Program compliance has varying requirements at the local, state, and federal levels. Faculty responsibilities are aided by training in Chemical Hygiene and Exposure Control Plan development for their laboratories.

INSPECTIONS

Inspections are conducted annually to address chemical and biological concerns and to measure the progress and depth of compliance in the University laboratories. Each researcher is contacted at the time of inspection. Concerns and violations are summarized on the inspection report and mailed to the researcher. Researchers are asked to address and correct their safety issues by a specified date. Some issues represent repeated items from the previous year. Non-compliance in laboratory settings is dropping significantly. Corrections in most cases were achieved due to staff perseverance with the investigators to work out reasonable methods to eliminate deficiencies.

CASE has more than 715 Principal Investigators (PIs) authorized to use chemical and biological materials in 3653 laboratories, rooms, and facilities. Inspections include physical inspections, verification of training records, verification of correction of previous violations, and follow-up. Audits are more frequent if there are particular concerns in a laboratory.

Inspections were conducted at UH, Metro Health, and Veterans Administration (VA) Hospitals. Squire Valleevue Farm, a University owned property, was also inspected. These outlying sites were inspected because CASE personnel are working in these areas. The Inspection Program for Chemical Safety compliance also investigates and resolves biological safety compliance and hazards. As noted, cross training of the Radiation Safety specialists has complemented and aided the Safety Services laboratory inspection program.

Responses to the majority of inspections are received within 30 days of the inspection. Outstanding inspections are sent to the department chairperson for follow up. Repeated issues that are not addressed by the investigator or chairperson are passed on to the Deans or Provost for further action.

BUILDING NAME	ROOMS INSPECTED IN 2005
ART STUDIO	32
AW SMITH	120
BINGHAM	143
BISHOP	20
BOLWELL	18

CLARK	
DEGRACE (BIOLOGY)	41
DENTAL	221
GLENNAN	137
HANNA PAVILION	45
HEALTH SERVICES	39
KENT HALE SMITH	16
LOWMAN	1
MACDONALD	42
MATHER GYM	
MATHER MEMORIAL	
METROHEALTH	77
MILLIS	190
MORLEY	39
NURSING	128
OLIN	115
PATHOLOGY	95
RAD WASTE FACILITY	
RBC	33
RESEARCH TOWER	99
ROBBINS (MED EAST)	237
ROCKEFELLER	91
SEARS BLDG.	
SEARS TOWER	70
SERVICE BLDG.	
SQUIRE VALLEYVIEW FARM	wEd 10.02 0 0 10.02 90 0V1(1 Tf-0.003(48 11.52 rec -0.0016f0.32.L(R)-49.1

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SPECIFIC SAFETY PROGRAMS

Lead	2	6
Methyelendianiline	2	0
Methyl Chloromethyl Ether	0	1
Methylene Chloride	12	17
TOTAL	84	137

INDUSTRIAL HYGIENE

INDOOR AIR QUALITY (IAQ) MONITORING

The IAQ monitoring protocol ensures that concerns are addressed in a timely manner using the appropriate techniques. Air monitoring is done when necessary and an assessment is carried out through sampling and analysis. Follow-up is executed when the analyses is complete. A report is written assessing the results and given to the complainant and the immediate supervisor.

Four IAQ complaints were investigated in the Adelbert, Thwing, Stone Commons and Sears buildings. Follow-up included assessment of questionnaires, performance monitoring, contracting for in-depth monitoring, analysis of EA Group results, and presentation of summary reports.

Of the four IAQ complaints, one was discontinued (Sears) due to no response from the original complainant. One area required further action (Adelbert) that included correction of the HVAC system and mold abatement resulting in IAQ improvement. Two areas (Thwing and Stone Commons) were found to have no significant IAQ issues. All of these measures were coordinated with Plant Services and Customer Services.

ENVIRONMENTAL MONITORING

The environmental sampling protocol ensures dust exposures are addressed in a timely manner.

ASBESTOS MONITORING

Asbestos monitoring is addressed on a per case basis. EA Group sampled 73 asbestos projects and analyzed them. Reports were written assessing the results and sent to the concerned parties. For all projects positive for asbestos, a request was submitted to Customer Service or arrangements were made by DOES to have the area remediated by an approved asbestos contractor.

BIOAEROSOL MONITORING

The Semi-Annual Bioaerosol Monitoring Project was discontinued due to budgetary constraints. Monitoring will now be conducted on a case-by-case basis. Historical bioaerosol sampling results were analyzed to study changes in the patterns of bacteria and fungal growth in different seasons of the year. These sampling strategies and consultation with the construction teams about abatement and mold remediation have resolved ongoing mold grout problems. For all projects positive for mold growth, a request was submitted to Customer Service or arrangements were made by DOES to have the area remediated by an approved contractor.

Two suspect areas were sampled and analyzed using a new sampling strategy (air-o-cell monitoring). For the one project positive for mold growth, arrangements were made by DOES to have the area remediated by an approved contractor.

LEAD MONITORING

Lead monitoring is addressed on a per case basis. For all projects positive for lead-based paint above EPA regulations, a request will be submitted to Customer Service or arrangements will be made by DOES to have the area remediated by an approved contractor.

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IAQ SAMPLING	05/06	04/05	03/04	02/03	01/02	00/01	99/00	98/99	97/98	96/97	95/96	94/95	93/94	92/93	91/92
ASBESTOS	98	61	171				1	2	7	1	5				
	98 0 99	1			9	9									

FORMALDEHYDE	0	3
GAS	0	25
OTHER	13	49
CLEARANCE	1	0
ALARM	15	0
HOOD	8	0
TOTAL	271	306

INCIDENT/ INQUIRY	**05/ 06**	**04/ 05**	**03/ 04**	**02/ 03**	**01/ 02**	**00/ 01**	**99/ 00**	**98/ 99**	**97/ 98**	**96/ 97**	**95/ 96**	**94/ 95**	**93/ 94**	**92/ 93**	**91/ 92**
TOTAL	271	306	297	204	210	152	201	150	206	192	59	120	139	90	42

WATER LEAK IN LABORATORY – 1/30/2006

The water leak was found by Security and reported to Safety. Custodial Services was cleaning up the water upon arrival. Tygon tubing from Millipore equipment burst resulting in flooding of the 4th laboratories, and leaking in the 3rd, 2nd and Ground Floor laboratories. Water damage was extensive in a 3rd floor resulting in computer damage and loss of experimental specimens. The flood was caused by the lack of permanent plumbing to secure the Millipore equipment (ice machine). Permanent plumbing on the ice machine will be done in the future to prevent future leaks.

EMERGENCY RESPONSE PROGRAM

Following the 911 tragedy in 2001, the Federal government put into place a National Security Alert System that codes the level of security required on a daily basis. When the level is raised from red to orange, the DOES staff increases its on-call schedule to 24-hour status. The DOES Conference Room has been designated as the Emergency Operations Center (EOC) should the need arise. If the DOES site is compromised, a reciprocal arrangement for housing emergency services has been established with General Electric in Nela Park.

Collaboration with Case Protective Services, Cleveland Fire and Hazmat as well as Summit County Hazmat in live scenario trainings has improved communication and allowed outside response partners to become familiar with the University campus. DOES coordinated its response with the Risk Management Department to reduce the FM Global Insurance recommendations concerning the safety of the University. Follow up of specific safety concerns were completed and documented revealing better compliance with each year.

EMERGENCY RESPONSE PLAN

The DOES Emergency Response Plan was reviewed and revised to integrate with the Campus Incident/Emergency Management Plan. This DOES plan was distributed to University staff, Cleveland Fire Department, Cleveland Police Department, and Hospitals. With the heightened security levels of post 911 and the events that have taken place at CASE, the need for full-scale emergency response compatibility is mandatory. A committee has been assembled to plan exercises leading to an emergency scenario involving CASE personnel and its City and regional partners in Police and Fire Departments, and Emergency Services. Working with Protective Services, DOES has begun to assemble a collaborative network with Cleveland Fire, Cleveland Police, University Heights Police, University Hospitals, and the County Emergency Medical Association (EMA).

RESPONSE EQUIPMENT

All emergency response vehicles and response equipment are checked and maintained regularly. An action plan for maintaining proper readiness was developed using equipment as follows:

- 400-500 pairs of thin Nitrile gloves
- 35-40pairs of other glove types over 12 mils
- 70-80 Tyvek suits
- 10-15 Tyvek QC suits
- 24 pairs Tyvek polycoated booties
- 3 lbs. Mercury absorbent and kit
- 100 lbs. of various other absorbent for solvents, formaldehyde, acids, etc.
- 40-50 spill filter strips

Committee (IBC), IACUC Committee, Institutional Health & Safety Committee, the University Compliance Committee, 2 BSL-3 Advisory Committees, the Task Force on Avian Influenza Preparedness, and is Chair of the Bio-defense and Emerging Diseases Task Force.

The one select agent to be used on campus, BSE, has been registered with the CDC and USDA.

The Physical Safety Manual is available online.

ERGONOMIC EVALUATIONS

Ergonomic assessments are only conducted upon an employee's request. Six individual office assessments were completed. Suggestions were made on how individuals could improve their areas through implementation of good ergonomic work practices and through information to help them understand these practices. Most suggestions have been accomplished with very little or no impact to the Departmental budgets.

NOISE LEVEL MONITORING

In an attempt to identify and resolve possible noise hazards on campus, sound level monitoring is addressed on a per case basis. The Hearing Conservation Audiometric Testing and Training Program is ongoing. The services of the Cleveland Clinic and a Licensed Audiometric Specialist continue to be enlisted for this program. It is estimated that approximately 150 employees will be included in this annual testing program.

This full-scale Noise Management Program includes training, managing audiometric tests for employees, PPE selection consulting and PPE use training, OSHA compliance, and provision of engineering control methods to reduce noise levels. To improve the quality of noise measurements, a new Sound-Pressure Level Meter (Quest) with noise analyzer was purchased. Standard Operating Procedures are being developed for sound level meter use during field monitoring.

Noise monitoring was conducted during one of the CASE Band Rehearsals at Denison Hall on April 17, 2006. The Band Director and a percussionist wore the noise dosimeters. The OSHA Hearing Conservation (OSHA HC) limit of 85 dB for an 8-hour Time Weighted Average (TWA) was not exceeded. The OSHA Permissible Exposure Limit (OSHA PEL) of 90 dB for an 8-hour TWA requiring the use of engineering controls to reduce noise levels was not exceeded. The permissible sound level of 102 dB for a period of 1.5 hours (actual dosimeter run time) was not exceeded. Based on all the data gathered, it was suggested that earplugs be used during band rehearsals to reduce the risk of hearing loss to band members.

Noise monitoring was conducted in the office space that is partitioned from another part of the room in Clarke Basement on April 4,2006 and May 17, 2006. The OSHA Hearing Conservation (OSHA HC) lig[(inclu)5(ded ia)5(s J0n 0 F7mn)5(sOs. Ton)-2F7mns[(Noi)7(s)-2(e mo)w -35.1nothe7(s)-3(299 -g bar

established on the site. The permit is required to be posted near the site. The permit is issued for a certain time period, which is normally no more than one week.

The Hot Work and Hot Work Permitting Programs were reviewed and revised this year. The program now includes site and equipment inspection along with training. One hundred and seventy three short-term permits were issued. Long-term permits that extended over one month were issued that required weekly inspections. Due to the increased volume of Hot Work Permits, DOES will review only Contractor Hot Work permits in the future since the amount of campus construction will decrease during the fiscal year and the Facilities Department will oversee CASE maintenance projects requiring hot work permits.

CONSTRUCTION SAFETY

A DOES representative oversaw the Hazardous Materials Waste Collection Program of

CASE SAFETY SERVICES ANNUAL REPORT
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ENVIRONMENTAL RELEASES

The Northeast Ohio Regional Sewer District (NEORSD) requires semi-annual reports as part of Best Management Practices (BMP) for minimization of mercury discharge from dental offices to the Cleveland sewer system to a regulatory level of 25 parts per trillion. CASE's sewer releases were in compliance with both federal and state regulations. In the past fiscal year, the report for January through December 2005 was filed on February 2006.

Water testing for nitrates and nitrites were performed in the dormitories on the southern half of the campus during the month of December 2005. The assessment included collection of 56 samples, summary of results, and distribution of reports to the facility coordinator for the dormitories. No regulatory exposure levels were exceeded. In the future the water sampling will be conducted on an annual basis.

Overall, waste collection at CASE continued to increase during the 2005-2006 fiscal year. The ability of the Chemical Analytics contractor to perform de-activation of Peroxides, Picric acid, and Perchloric acid reduces the intrinsic cost of disposing of this material and represents a significant cost savings. Most importantly, reduction in hazard through on-site performance of waste handling complies with OSHA requirements.

A regular audit of all manifests is routinely carried out to ensure all manifest records are complete before the 42-day time limit impact by EPA regulations. Approximately 757 Hazardous Waste Forms from 2005-2006 were scanned into the database and organized into folders on the server. The number of bottles listed one the forms vary from one bottle to several bottles per pickup. The scanned forms were then verified against the Hazardous Waste Log Book for discrepancies.

STATE MEDICAL WASTE

Stericyle (formerly BFI), the waste disposer, incinerated all Regulated Medical Waste through Regulated Medical Waste Treatment Disposal Shipping. This waste included dead animals, syringes, needles, and potentially infectious materials. The number of pounds of regulated medical waste treated approximately totaled 103,266 for the fiscal year.

TREATED INFECTIOUS WASTE

Hazardous waste at CASE is treated by autoclaving before landfill disposal. Autoclave Certification was first completed for disposal of biohazardous waste in November of 2003. Elements of this disposal program include ongoing Validation Testing and Quality Assurance Testing of the autoclave. These tests involve running a test pack through the autoclave. The samples are then incubated for 24 hours, 48 hours, and one week. Growth in any of the samples indicates failure of the decontamination process. In such cases, the autoclave is taken out of service for diagnosis and repair. Records of autoclave certification are kept both in hard copy and an electronic database on the DOES Server.

Quality Assurance Testing is carried out once a month to ensure the autoclave unit is functioning properly. There were 12 Autoclave Quality Assurance Tests and 5 Validation Tests done this fiscal year. Validation is also carried out to verify that certified out of service units have been repaired. Validation testing is also being carried out at any time upon request of the Ohio EPA. Autoclaves that do not apply an approved testing program are not considered sterilizers under state law. All materials treated in an uncertified autoclave are still considered to be infectious materials for disposal purposes.

In the past year, Safety compliance and equipment inspections were carried out and resolved for the University's bio-hazardous waste autoclaves. All infectious waste treated in the SaniPak

Autoclave was transported by Waste Management Industries (WMI) to the American Landfill. The number of pounds equaled 31,250. The volume of this waste is greater than 30% of the total hazardous waste generated at CASE. Stericycle incinerates the remaining waste.

RECYCLING PROGRAM

The Recycling Program for chemical solvents was terminated in October 2001; however, recycling of a number of materials continues to be carried out successfully for materials collected from the main campus Complex. Currently the following waste streams are recycled on the campus:

- Lead
- Paint
- Batteries
- Computer monitors (weigh up to 30 pounds and contains 8 pounds of lead)
- Computer
- Equipment (Electronic)
- Fluorescent Bulbs

Fifty-two Bills of Lading were collected for recycled material. Environmental Recycling collected the University's Flourescent Bulbs.

WASTE FACILITIES

CASE Waste Facilities are used to segregate and prepare waste for disposal. The different waste streams include aqueous waste and dry solid waste. Reducing the volume of waste to be disposed remains a continuing aim of the waste program promoted by the SSO. As part of the Waste Minimization Program, researchers are encouraged and instructed in how to reduce the volume of waste generated in the laboratory.

WASTE DISPOSAL

Hazardous waste rooms are used as central collection points for what the EPA defines as a site. CASE presently has 8 sites. CASE also operates 90-day waste accumulation areas that are inspected on a weekly basis. The accumulation areas are located at DOA990, Millis G35, and WRB 1103.

The hazardous waste disposer was Chemical Analytics for Hazardous Waste, PCB material, Batteries, Non-PCB Ballasts, Mercury, and RQ Solutions (Polychlorinated). The disposer for Hazardous Solid Waste such as Lead and chrome was Michigan Disposal Waste Treatment Plant. Metallic Resources was the disposer for Computer Monitors and Office Equipment, while Heritage Waste Management Services collected hazardous materials associated with moves from one on-site facility to another.

DISPOSAL SITE WASTE DISTRIBUTION

WASTE TYPE	DOA 990	MILLIS	ART STUDIO	WOL-STEIN	BIOENTER-PRISE (UCRC I)	CASC	ARC RENO-VATION PROJECT
CONTAINERS <1 gal (gal)	5578	1804		329	36	285	484

CONTAINERS (UNKNOWNS)) (#)	182	30		18			33
CONTAINERS (DIRECT INCINERATION) (#)	264	121		18	1		5
CYLINDERS (#)	8	1					8
55-GAL DRUM (#)	26		3				
OXIDIZERS (#)						250	
PAILS (5 GAL)	75	161		3		10	12
ASBESTOS (BAGS)	6						
FLAMMABLE LIQUIDS (GAL)						1	

LAMP 4 FT (TUBES)			600	3300	1200
LAMP 8 FT (TUBES)			150		
LAMP U (TUBES)	2				
LAMP OTHER (TUBES)	2		750		
FLUORESCENT BULBS (#)			70		
ELECTRICAL DEVICE (#)	1				3
BATTERIES (#)		38	856		

MANAGEMENT CENTER WASTE DISTRIBUTION

MANAGEMENT CENTER	**Arts/ Science**	**Engineering**	**Dental School**	**Medical School**
WASTE COST	$47,250	$28,485	$4,735	$547,094

WASTE COST	**05/06**	**04/05**	**03/04**	**02/03**
ARTS/ SCIENCE	47,250	41,746	51,961	112,064
ENGINEERING	28,485	64,292	37,952	71,723
DENTAL SCHOOL	4,735	4,238	2,335	5,475
MEDICAL SCHOOL	547,094	471,374	413,696	138,999

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SUMMARY

DEPARTMENTAL STRENGTHS

The SSOF operations requires a staff with broad and diverse backgrounds that can address and resolve a wide range of issues faced in Chemical and Biological Safety at CASE. DOES has developed programs that meet or exceed regulatory requirements in all critical safety areas and proactively anticipates new safety regulations.

DEPARTMENTAL OPPORTUNITIES

Established DOES safety programs continually evolve to meet requirements of governmentally mandated safety initiatives. The DOES continues to enjoy an excellent cooperative interaction with other University departments that are developing safety-related initiatives. Further, DOES's relationship with outside agencies has augmented the quality of its environmental programs.

ACCOMPLISHMENTS FOR 2005-2006

Notable new accomplishments included:

- After retirement of two senior staff members and departure of a technical staff member from Safety Services, DOES successfully reorganized the Department to meet the challenge of operating with smaller technical staff.
- DOES developed and carried out more comprehensive internal audit of all programs.
- The DOES maintained its liaison program to provide a service connection to the safety programs for all Faculty, Staff and students.
- For Plant Safety
    - Wrote new SOP and programs for Tow Motor Safety, Confined Space, Vehicle Safety, and Ladder Safety
    - Developed and implemented new procedures for hot work permitting for the entire campus and all contractors.
    - Participated with Plant Services in review of safety requirements for all projects and developed efficient procedure for providing Contractor Safety Awareness training for all contractors.
- For Laboratory Safety
    - With Faculty Committee, developed improved security for the Select Agent Program and met with Select Agent staff leadership and Faculty throughout year to maintain compliance in these programs.
    - Completed ASHRAE testing of all campus hoods to establish performance criteria that can be correlated with velocity testing of these primary safety enclosures.
    - Developed a new narrated program for Department of Transportation training.
    - Successfully completed a large number of laboratory decommissionings in collaboration with Radiation Safety staff and involved faculty to expedite laboratory moves and renovations.

GOALS FOR 2006-2007

Alignment with the educational and research goals of the University through training and training development continues to be the SSOF primary goal. Educational and programmatic interaction with local emergency responders continues to increase the SSOF impact in the community. Specific efforts will strive:

- To continue to provide comprehensive Safety Monitoring and new program initiation for the CASE Campus in the face of significantly reduced staffing. Accomplishment of this goal will require continuous rebalancing of the Departments safety programs to ensure that no critical safety areas are left unaddressed during the coming year.
- To continue to foster our excellent relationships with Cleveland Fire and our Community emergency response providers.
- To provide the training materials required for the campus Avian Flu pandemic plan and to ensure, with Protective Services, that the emergency response scenario to test our readiness

APPENDIX