FINAL

CASE

Laboratory Safety Committee

Annual Report
Fiscal Year

2003-2004

10/19/2004

INTRODUCTION

This report is submitted to the President and appropriate members of the senior administrative staff of Case Western Reserve University (CASE), as required by the Laboratory Safety Committee (LSC) Operating Guidelines. It summarizes the

LICENSE/ REGISTRATION

OHIO DEPARTMENT OF HEALTH (ODH) LICENSE

At present, CASE maintains six certificates of registration for:

EPA & OEPA RCRA- 6 sites
The Department of Transportation (DOT)
The OEPA for Hazardous and Infectious Waste
The United States Department of Agriculture (USDA)
The Center for Disease Control (CDC)
The Department of Commerce.

CERTIFICATE OF REGISTRATION	EXPIRATION DATE	PURPOSE
US DOT Research & Special Programs	Expires – 6/30/2005	Hazardous Waste Transport
OEPA Generator of Hazardous Waste Management	Expires – 12/4/2006	Infectious Waste
USDA High Consequence Agent Program	Effective - 11/12/2003	Animals/Plants

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 and administered under DOES programs as generators of Infectious Waste: DeGrace (Biology), Millis, Morley, Smith, Rockefeller, Bingham, Glennan, Olin, White, Wickenden, Med East (Robbins), Pathology, Nursing, Dentistry, Health Services, Biomedical Research Building (BRB) and Wolstein Research Building. Registered generators of Hazardous Waste registration are: DOA990, Morley, Millis, University West, Cedar Service Center, Wolstein Research Building, and West Campus (formerly Mt. Sinai).

EPA/ RCRA INSPECTION

There were no EPA/ RCRA inspections of the University during the fiscal year. On 6/17/2003, the Ohio Environmental Protection Agency (OEPA) Hazardous Waste Division inspected the facilities and found no violations.

OSHA COMPLAINTS

The following OSHA complaints were administratively handled in 2003/2004.

11/17/2003 – COMPLAINT # 204-763-171

Notice of safety and health hazards complaint: The original complaint cited 1) no signage or labels noting hazardous chemical and radioactive material in Med East 2002, 2) lack of training for exposed employee, and 3) lack of personal protective equipment for an exposed employee. This complaint was investigated and no

problems requiring program adjustment or special response were identified. A report of these inspections and assessments was made to OSHA in writing, posted on 11/21/2003 and the matter was closed.

11/24/2003 – COMPLAINT # 204-767-230

Notice of safety and health hazards complaint: The notice 1) alleged health hazard in Medical School laboratory. The work site was inspected, and perceived hazards were mitigated. A report documenting the inspections and assessments was made to OSHA in writing, posted on 12/15/2003, and the matter was resolved without issue of an OSHA violation.

Notice of clarification complaint: 1) ability of employees to make complaints without any threat of retaliation. The University's policy on safety encourages employees to bring complaints about safety in the work place to the University and/or OSHA's attention without any form of retaliation. A report documenting this assessment and policy was resolved in writing and posted on 1/9/2004.

SAFETY SERVICES PROGRAM RESPONSIBLE PARTIES

MANAGEMENT

The Safety Services Program provides support

CASE's administration in order to ensure the safe use of chemical and biological materials while complying with the appropriate regulations.

LSC RESPONSIBILITIES

The Laboratory Safety Committee has the following responsibilities:

Development, review, and recommendation of laboratory safety programs to comply with regulatory requirements and sound risk management practices.
Identification and consultation with faculty on safety issues related to chemicals, pathogens, and carcinogens and in concert with the University's Biological Safety Committee, recombinant DNA.
Assignment of either its members or appropriately qualified non-members to serve as advisors for safety programs in specific chemical and biological safety areas.
Amendment and improvement of DOES chemical & biological safety programs as required.
Conduct of appropriate audits designed to assess effectiveness of DOES programs and procedures affecting laboratory safety
Review of laboratory activities that may be of concern to the public.

SUBCOMMITTEES

The Laboratory Safety Committee monitors four subcommittees:

Biological Safety Committee (Recombinant DNA)
- IUCAC Committee (Pathogen Safety in Animals)
- Carcinogen Use Committee
- Select Agent Use Committee

LSC SUBCOMMITTEE DUTIES IN THE PROTOCOL PROCESS

The LSC subcommittees review the chemical/biological protocol (IUCAC for Carcinogens, ICARU for Biological Materials, or Animal) for safety content, as well as to ensure that CWRU-specific guidelines are met.

SAFETY SERVICE OFFICE (SSOF) AND PRINCIPAL INVESTIGATORS (PIs)

EX-OFFICIO MEMBERS

Kenneth Basch
VP of Campus Planning &
Operations
Adelbert 325

New Employee Compliance Committee
Reports and discussion of LSC Audits

[redacted]ORD AUDITS

[redacted]rsight and accountability of the Safety [redacted]s auditing of Department procedures [redacted]isted below and the focus of individual [redacted]003-2004 is identified with the auditor's

[redacted]	LSC AUDITOR
[redacted]	
[redacted]	
[redacted]	
[redacted]	
[redacted]	
[redacted]	X
[redacted]	X
[redacted]	X
[redacted]	X
[redacted]	X

PROGRAM AUDIT REPORT SUBMITTED BY THE CHAIRPERSON

The Laboratory Safety Committee conducted its annual audit of the Safety Services Office throughout the year. Nine areas were subject to audit. These were:

Respirator Program
Clearances Program

This operation is well organized and efficiently run. One improvement underway involves tracking recycling of materials by departments other than DOES. Examples of recycled materials in this category include fluorescent lamps, computers, and paints.

INCIDENT REPORTS

LSC AUDIT COMMENT:

There were 207 incidents, none involving injuries. Overall, the files were found to meet requirements, although some did not document required follow-up, including required reporting to outside agencies.

SSOF RESPONSE:

All reports needing outside agency reporting were attended to promptly and are well documented in the file. Such reporting, however, is rarely required and, therefore, is not likely to appear in a file.

WEBSITE ACCURACY

LSC AUDIT COMMENT:

The website was found to be very user-friendly. However, some features were found not to be operational. Also, some database files did not match paper files, with one case of a complete mismatch

SSOF RESPONSE:

The web site is a large and relatively complicated living document,

of these files to ensure that laboratories are staying current with this requirement for protocol review. This process is documented on the laboratory inspection forms sent to each laboratory after yearly inspections are completed.

LABORATORY/ WASTE FACILITIES INSPECTIONS

LSC AUDIT COMMENT:

Three laboratory areas were audited and one, The Wolstein Building waste facility, was not operational at the time

compliance issues in the Safety Services Office.

The DOES Internal audits address program effectiveness and efficient operation. These audits have resulted in administrative modifications throughout the past year.

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 audit queries, the Safety Services Office has moved forward

Program Procedures documenting that program alterations were promptly made to ensure currency.

SAFETY SERVICES OFFICE (SSOF)

STAFFING

The SSOF operates under University approval as part of DOES with the following staff positions:

Director (1)	Associate Director (1)
Engineer (1)	Loss Prevention Specialist (1)
Specialist Positions (4)	2nd shift Specialist (1)
Department Assistant (1)	Student (1)
Specialist Position (2) – future	Plant Safety Specialist (1)

The DOES infrastructure continues to recruit individuals to Specialist positions to improve the Department's knowledge base and provide for more flexible response to emergencies and other issues. The SSOF Staff is qualified to support and maintain the Safety Services Program. Reorganization of the SSOF led to the hiring in 2003 of three individuals in a manner consistent with the Department's goal. A 2nd shift Specialist, joined DOES over the past year with a medical and Environmental & Occupational Health Specialist background. He meets the University night service and security needs. DOES was also joined by an asbestos and environmental safety Specialist, and a plant safety specialist with a strong background in Emergency Response who is currently servicing the Plant Safety Programs for the University. Our Safety Services Engineer has also assumed responsibility for construction and contractor safety.

A specialist who maintains the Departmental Homepage and databases also augments the Safety Services programs. Further, Safety Service operations are carefully monitored by the DOES Quality Assurance Specialist through a system of audits that examine the portfolio of Safety Service

TRAINING AND PROFESSIONAL DEVELOPMENT

All new specialists and specialists in our ongoing programs receive job specific training in new areas through work under the auspices of experienced personnel. These specialists also attend training programs offered by outside experts that provide necessary certification for a number of areas covered by our programs.

Training and Conferences attended in 2003-2004 included certifications of Asbestos Hazard Evaluation, Lead hazard training, Bioterrorism, Respirator Fit test training, DOT Hazmat Refresher, ASHRAE Ventilation Testing, RCRA Training, training in Transportation of Infectious Substances, Center for Domestic Preparedness Live Nerve Agent Training, and COBRA technician level training. All staff members received 8-hour Hazardous Materials Refresher Certification and 16-hour Incident Command Certification. Moreover, selected staff members received training in Domestic Preparedness. Seminars attended by various staff members in 2003-2004 also included Biomedical Lectures, The Basics of Writing Policies and Procedures, Fundamentals of Industrial Hygiene, OSHA Compliance Update, and Auditors Roundtable.

Further, the DOES staff was involved in Refresher sessions given in-house that included training, response activities and exercises. It should be noted that cross training is an important element of DOES programs that provides each of our responders with a broad range of response capacities in case of emergency and for handling day-to-day challenges presented by Safety Service's operations.

Notably, cross training efforts have allowed the Radiation Safety Staff to become involved in the laboratory standard inspection program, providing an expansion in the knowledge base of our radiation safety personnel and bringing a different perspective to the Safety Services inspection operations. In addition, presentations at DOES by campus researchers promoted connection to our customers and their research for all staff members. For example, one colloquium brought our staff up-to-date on new imaging techniques that are becoming increasingly important to Case research efforts.

improve performance through direct interface with faculty staff and students. Responsibilities under this program include quarterly visits to laboratories and Plant Service zones by individual DOES Staff members. Several inquiries and concerns are addressed through this avenue. For example, installation of Safety Rails on the roof of the Research Tower was initiated by SSOF staff after a dialogue with the 2nd Shift Plant Maintenance personnel concerning personal safety and laboratory personnel increasingly utilize dialogue with their liaison representative to expedite compliance with DOES programs. Broad use of the DOES E-mail hotline has been stimulated by relationships forged through these contacts.

The forging of lasting communication channels is

DOES WEB SITE

The DOES home web site (http://does.case.edu) provides integrated web-based access to DOES services. Information on training classes, retraining, and safety manuals are all available on-line. All information on the DOES web site is updated on a regular basis. Over the past year, using this resource, the SSOF has provided researchers with:

An updated template for the DOES web site
An updated link of the Service Building Picture to CASE campus map
Laboratory Coat Laundering Service information
BSL3 laboratory and Select Agent Information
Construction Project MSD sheets
Emergency Evacuation Plans
Laboratory Standard Online Retraining
Updated BioSafety Hood Service Request Form

"Renew your Safety Training"
"Safety Questions: Log on to: does.case.edu "
"New regulations for working with Select Agents "
"Lotion and Latex gloves"
"Safety Plan: Does you laboratory have a HCP, CHP, or ECP?"
"Has your lab posted the appropriate caution signs?"
"Labeling Regulated Chemicals"
"Guidelines for Packaging and Labeling Infectious Substances and Clinical Specimens"

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

EMPLOYEE COMPLIANCE COMMITTEE

The SSOF formed the Employee Compliance Committee which includes representatives from departments that hire laboratory personnel (Human Resources, Student Employment, Spherion Temporary Employment, Health Services, and Medical School). The Committee's first concern was to improve tracking of University employees but it has also been instrumental in helping the University avoid liability concerns. For example, through working with Human Resources (HR) the Committee has helped to draft policies for Volunteers and Minors that work in the laboratories, a definite liability for the University. Following these efforts, volunteers and minors must currently register with HR and minors under 18 years must attain parental consent before working in laboratories. It recommended that minors under 16 years no longer work in laboratories unless they are matriculated at the University.

A Medical, Environmental, and Training Subcommittee also was formed to evaluate and conduct risk assessments of campus fac92 T3 /F3.0 1 Tf (rmpus) Tj ET Q 0.01523640 761 cm BT 58 0 0 721 Tf (f

potentials for detrimental indoor air exposures in these campus facilities.

ORIENTATION PROGRAM

The Orientation Program was established with Human Resources to ensure that new employees at CASE have a general awareness of the services that were provided by DOES. This program determines the safety training classes that employees must attend to promote safety in laboratories and other work place sites. The program addressed 7155 new employees at 50 S

Both initial and retraining classes were offered on a weekly basis. During the past year, the SSOF held classes in the following major areas: Laboratory Safety, Right-to-Know, Plant, Respirator, DOT, and BBP. More than 3004 individuals were trained in various safety areas over the year. Most retraining was accomplished over the Internet. More than 1421 individuals or 47% of all training increasingly utilized online training in BBP, Regulated Chemical, Laboratory Safety, and Respirator Safety. The SSOF also presented State Medical Waste classes for four employees, and Contractor Right-To-Know classes for 80 employees.

SPECIFIC TRAINING PROGRAMS

RIGHT-TO-KNOW TRAINING (RTK)

The Right-To-Know (Hazard

These groups may enter a specialized laboratory on a daily basis and thus required specifically tailored safety training.

LABORATORY SAFETY TRAINING

Revisions to the Laboratory Safety and Regulated Chemical Training course were completed. Laboratory Standard Classes were given for 557 employees. Several specialized Laboratory Safety classes for specific target groups included presentations for medical and dental students (138), training of 58 Summer SPUR and SURP students, and Macromolecular Science and Chemical Engineering personnel.

BLOODBORNE PATHOGEN TRAINING (BBP)

Materials likely to contain Bloodborne Pathogens are widely used in Case laboratories. BBP training of 490 employees included monitoring of compliance and required vaccination and health monitoring programs. BBP and tuberculosis exposure training was also carried out for 176 medical students, 44 Plant personnel, 109 Custodial personnel, and 40 Spherion temporary personnel.

substance shipping training. Increased training in hazardous material shipping for involved campus personnel is an important goal for the coming year.

RESPIRATOR TRAINING

Special training sessions for Plant Services, Animal Resource Center (ARC), and BSL3 Facility employees were conducted. Fit testing sessions were also carried out. 40 Plant workers, 41 BSL3 users, 9 Contractors, and 28 Laboratory workers completed the medical evaluation, were respirator trained, and then fitted for respirators.

DRIVER SAFETY TRAINING

Driver Safety Training is presented

Hot Work – 43 personnel

These sessions are presented three times on a scheduled day so all Plant shifts can be accommodated. Training sessions for the Plant 2nd shift personnel have been conducted every month since the beginning of 2004.

FACILITIES AND EQUIPMENT

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

NEW BUILDINGS

Two new buildings were opened this year, the Wood Research Tower (RT), an extension of the Medical School, and the Wolstein Research Building (WRB). The WRB is approximately the same size as the Biomedical Research .a9 R 1476.99 2454 Tm /F34 30eTW99e8r2454C320 lj E

LABORATORIES

There are approximately 778 programs involving laboratory-based research that are serviced fully or partially by CASE safety programs. These laboratories are found in 4 hospitals, the main campus and the Medical and Dental school facilities. All of these laboratories are equipped to use hazardous material and equipment. The laboratories typically include chemical hoods, meters, analytical detection and measurement equipment, waste receptacles, and decontamination supplies.

SAFETY SERVICES OFFICE

Safety 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 (Clerical, CSO, & staff) & Conference Room:

Updating of computer hardware and software is crucial to handle the amount of data required to be accumulated and to ensure efficient and quick access to records in the SSOF. To this end, we have purchased a Dell Power Edge 2600 Server to support the Filemaker Pro database, which is the SSOF main resource for data collection of safety services information. Nine Palm Pilots were purchased to use when conducting inspections.

Pilots. The training programs were converted from

Respirator Leak Rate Analyzer				
MultiRae Personal Multigas Monitor	PGM50-5P	095-512273	As Needed	11/2003
Rotameter	MMA-25		Annually	7/12/2005
Pulse Check Pump Module	710466	G1-5713-F99	Annually	12/2004

SAFETY SERVICES PROGRAMS

to achieve compliance. Non-compliance in laboratory settings is dropping significantly. Corrections in most cases were achieved due to the staff perseverance with the investigators to work out reasonable methods to eliminate deficiencies.

CASE has more than 683 Principal Investigators (PIs) authorized to use chemical and biological materials in 1971 laboratories. Laboratories are inspected by the SSO annually. 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 outlying sites including UH, Metro Health, and Veterans Administration (VA) Hospitals. 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. Repeat issues that are not addressed by the investigator or chairperson are passed on to the Deans or Provost for further action.

Building	**Rooms Inspected**
Bingham	78
BRB	493
DeGrace (Biology)	22
Bolwell	1
Clark	0
Dental	206
Glennan	164
Health	43
KHS	71
Wearn	76
White	180

Wickenden	144
Wood	352
UCRC II	57
MacDonald	24
Mather	0
Med East	592
MetroHeath Hospital	51
Millis	237
Morley	23
Nursing (Bolton)	14
Olin	0
Pathology	189
Rad Waste	11
RBC	52
Research Tower	13
Rockefeller	62
Strosacker	0
AW Smith	230
VA Hospital	17
Lowman	0
Wolstein	0
Walker	0
Total	**3408**

SPECIFIC SAFETY PROGRAMS

OSHA LABORATORY PERFORMANCE STANDARD

Compliance with the OSHA Laboratory Performance Standard requires attention to a number of specific programs and procedures.

MATERIAL SAFETY DATA SHEET (MSDS) PROGRAM

The MSDS program is available through Chemwatch as a hard copy printout for the laboratory staff to reference at the DOES Website. MSDS information continues to be accessed for chemical information.

Communication methods were evaluated with regards to Right-to-Know issues related to construction. To this end, DOES has developed an electronic posting board on the DOES website for MSDS sheets for each construction project as required by OSHA.

CHEMICAL HYGIENE PLANS/ EXPOSURE CONTROL PLANS

All laboratories working with chemicals and/or Bloodborne Pathogens are required to generate, keep on-file and educate their personnel in the contents of their Chemical Hygiene Plans (CHP) and Exposure Control Plans (ECP). Instructions and example forms for these plans are currently on-line at the DOES website. CHPs for this program are kept in the PI's laboratories and copies are sent to DOES for review and recording of compliance with this OSHA requirement. PIs at CASE were 95% compliant with annual documentation of awareness and development of plans for this program. A PI packet was created for new faculty members. The packet is a compilation of all safety information that is needed for establishment of safety laboratories at CASE. DOES staff members have also assisted in updating CHPs for the Chemistry Department teaching programs and an ECP for Protective Services.

HAZARD COMMUNICATION PLAN

Development of the Hazard Communication Plan was made specifically for non-chemical laboratories that use commercial products such as solvents and cleaning solutions. The Plan includes a chemical inventory, MSDSs, an employee list, safety precautions, and a training log and outline. A Standard Operating Procedure was also developed to aid the researcher in completing the Plan.

REGULATED CHEMICALS

Initiation of a new assessment technique for regulated chemicals consists of a questionnaire attached to a quiz for new training programs. All new employees must attend initial Regulated Chemical Training and any employee using a regulated chemical must take the annual online retrain.

Completion of a sampling plan for anatomy laboratories included 99 formaldehyde vapor samples, which reduces the sampling frequency to less than three sessions per semester. This plan is in place for the medical, dental, biology, and nursing anatomy laboratories. The results of formaldehyde sampling were summarized 30 761 c.0 1 Tf (per) Tj 97

Coordination of the air-monitoring program with EA Group for semi annual Bioaerosol monitoring was done in October 2003 and May 2004. More than 250 samples were taken and analyzed for the campus buildings and dormitories. Reports on this program were sent to facility coordinators. 20 additional samples were taken and analyzed for mold content in mainly water-damaged materials such as ceiling tiles. **RESULTS??**

LEAD MONITORING

The Lead program was evaluated and found to require major updates due to regulatory changes. The inventory of Lead areas is presently being evaluated for follow up sampling and conversion to searchable electronic format. This is expected to be completed earlier next year and release to Plant Services at that time.

Training of all Plant, Custodial, Security, and other administrative groups to the awareness level is expected to take place upon completion of the electronic inventory and subsequent sampling.

Lead monitoring is addressed on a per case basis. Sampling of areas in the Med East and Thwing buildings were done this year collecting 69 samples for analysis. The Lead Abatement is contracted out to

are required to working the facility. PAPR's though expensive, are much more comfortable that respirators and provide a higher degree of protection from inhalation hazards. ARC staff supervisors have assumed the responsibility of respirator training, arranging medical evaluations, and fit-testing personnel within the facility. No fit testing is required for PAPR use.

An assessment of Respiratory Hazards was carried out for the campus community. The assessment included employment of written methodology, assessment forms and questionnaires, employee interviews and evaluations, and exposure estimate calculations. All elastomeric face pieces and SCBAs were recycled to improve visibility

velocity above 120% of the benchmark velocity results in corrective action.

As a newly developed procedure, the safety department has conducted several on site ASHRAE tests for new chemical hoods before they are purchased for new projects. This procedure has been developed to ensure that all new hoods will meet the requirements of the latest standards and guidelines of the University.

The chemical hood approval methodology was evaluated and the standard operating procedure for evaluating new hoods was

allowed the researcher to sign up for re-certification or repair of the hoods. One hundred and ninetynine Biosafety cabinets and Laminar Flow hoods were recertified or repaired last year.

CLEARANCE/ RELOCATION PROGRAM

The implementation of the Clearance Program centralizes the process of equipment and maintenance surveys. More than 1200 clearances were conducted for PI's that moved to the Wolstein,

International Civil Air Organization Regulations (ICAO), International Air Transportation Association Regulations (IATA), specific carrier restrictions, and regulations particular to countries involved with international shipments, governs the shipment of regulated hazardous materials. The regulations are very precise as to how such materials must be packed, labeled and transported and, therefore required specific training reinforcement for involved employees. This program also required creation of the University Security Plan for hazardous material

semester or break and at the end of the school semester as well as the. This may be partial explained by the tendency of Plant Services and laboratories to inventory and dispose of chemicals during these hiatus periods.

The SSOF responded to five major incidents, 100 odor complaints, 23 of which evolved into IAQ assessments involving sampling and analysis reflective of possible safety problems. There were also 38 incidents involving spills and 23 incidents involving mold/ fungus in campus buildings excluding the West Quad. The complete spectrum of incidents is listed below:

Indoor Air Quality - 23
Odor Complaints – 100

emergency dried food, bottled water, glow sticks, walkie-talkies, and a battery-operated radio on site in the DOES Office suite.

GAS RELEASE – 10/6/2003 AT 2:00 PM

A malfunctioning component of the Master Flow control (MFC) was removed from a gas line and the toxic gas alarms sounded when the unit was disconnected. The building was evacuated and the fire department was called. The fire department cleared the building for reentry. The total gas volume released was no more than one cubic centimeter. The laboratory was instructed to wear respirators or SCBA when repairing this apparatus in the future.

FIRE IN LABORATORY – 1/11/2004 AT 6:15 PM

A fire occurred while using a dry chemical extinguisher on an unknown chemical. The chemical bottle was not labeled. The remnants of the bottle were placed into a glass container, purged with nitrogen, wrapped in parafilm, placed into a glove, and sealed with a copper strip. This item was removed to the DOES Waste Facility and placed in the walk-in hood for disposal. Cleveland Fire cited Case for improper storage of flammable materials, improper fire stopping, and misplacement of fire sprinkler heads. The laboratory damage included a burned wooden cabinet, smoke and fire damage to the wall.

FIRE ALARM – 2/4/2004 AT 9:45 PM

Protective Services reported a gas leak at a Case Building. The fire department was called. Plastic was burning due to an over-pressurized air compressor running in a laboratory. A plastic container on the compressor had burned. The air compressor was turned off. There was no damage to the laboratory. The PI was informed by SSOF that poor housekeeping practices caused the incident.

PLANT SAFETY INJURY – 3/18/2004 AT 10:00 AM

A Grounds worker fell off a ladder on to a concrete floor and sustained head, face, and leg trauma. The ladder was positioned improperly and lacked proper skid pads. The worker had not attended ladder safety training, lacked the proper personal protective equipment, and did not exercise the proper choice of tools for the task. The ladder was removed from service, a new door closure was ordered, and the incident was review at a Plant Safety Committee Meeting.

CHEMICAL SPILL – 4/21/2004 AT 10:00 AM

A Hazardous liquid bottle was broken when struck by another bottle. The broken bottle was not noticed at the time and began to leak into its Polycoat secondary containment within the flammable storage cabinet. Entry into the room was achieved safely by wearing a respirator with organic vapor cartridges, laboratory coat, and butyl rubber gloves. The major concern was the low explosion range of the chemical. The PHD Combustible Gas meter readings registered explosion level readings between 3-5%. The material was absorbed with pigs and spill pillows then over-packed into a five-gallon HDPE over pack. The SSOF addressed concerns about chemical labeling practices with the laboratory.

EMERGENCY RESPONSE PROGRAM

Following the 911 tragedy in 2001, the Federal government put a National Security Alert System into place 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 headquarters 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.

EMERGENCY RESPONSE PLAN

The DOES Emergency Response Plan was developed and designed 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 9-11 and the events that have taken place at CASE, the need for a full-scale emergency response 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 Fire, Emergency Services and Police Departments. 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).

Emergency Response to all incidents leading to possible biological agent exposures was investigated. This year there were several responses to bio-terrorism-related mailings but investigation proved that the materials involved were not hazardous.

RESPONSE EQUIPMENT

Response equipment was reviewed and an action plan for maintaining proper readiness was developed. The annual usage for each type of response equipment is as follows:

400-500 pairs of thin Nitrile gloves
10-12 pairs of other glove types over 12 mils
4-5 Tyvek suits
8-10 Tyvek QC suits
12 pairs Tyvek polycoated booties
30 lbs. Mercury absorbent and kit
10-12 lbs. of various other absorbent for solvents, formaldehyde, acids, etc.
20-25 spill filter strips

Other forms of response equipment have been incorporated into the inventory such as tack cloth for powder clean up and mercury

thermometer containment tubes. Personal Protective Equipment (PPE) has also been evaluated for adequacy and the types of materials kept on hand were augmented to increase response capabilities. Equipment on hand includes:

North Silvershield glove liners
Butyl, Viton, Polyvinyl Acetate (PVA), Kevlar, and Neoprene gloves
Saranex suits
Hazmat boots
Drum leak kit
Mercury Vacuum
Spill-X Guns

BIOLOGICAL SAFETY

BSL-3 FACILITIES

In the aftermath of September 11, 2001, the Patriot Act was enacted to protect against bio-terrorism. Two federal agencies are under its auspices, the Center for Disease Control (CDC) and the US Department of Agriculture (USDA). The Departments of Health and Human Services (HHS) and the USDA have promulgated rules in the Federal Register governing facilities that possess, use, or transfer select biological agents or toxins became effective on February 7, 2003.

SELECT AGENT PROGRAM

Currently there are two Biological Safety Level-3 (BSL-3) facilities for prion research (one for molecular and biochemical research, and one for animal research); a specifically equipped BSL-2 facility for prion research, as well as one BSL-3 facility for other potentially dangerous agents including HIV and Mycobacterium Tuberculosis. Biannual Select Agent Questionnaires were received from 18 PIs that use

equipment and materials, and computer issues. Installation of security for both facilities was completed in January 2004 as well as the fingerprinting and authorization of BSL3 personnel. An initial inspection of both facilities was conducted in April 2004 and correction of the violations was completed in July 2004. Three mock runs to prepare for handling of select agent were conducted in the facilities to evaluate procedures, design the program, and yield suggestions for improvement. The SSOF was on track for execution and approval of initial experiments for the Select Agent Samples of BSE and BASE in July 2004.

SSOF Staff designed the procedures and forms for registration, inventory of select agents, necessary equipment, and supplies, and decontamination/ destruction and security in handling of select agents. The general BSL3 safety-training program was also designed and implemented as a Powerpoint presentation and as an online training document. Manuals for both facilities were completed with final edits performed by the SSOF.

PHYSICAL SAFETY

PHYSICAL SAFETY MANUAL

The Physical Safety Manual was made available online. This manual has also been promoted through direct contact with investigators during inspections and in the DOES Newsletter. Laboratories that do not have an emphasis on chemical use can find many applicable safety recommendations in the Physical Safety Manual.

FIRE INSPECTION PROGRAM

Fire evacuation drills were conducted in all University owned residence

must update their evacuation plan due to changes to the facility. Through inspections of University owned buildings, residence halls, houses, and areas that need fire extinguisher installation or recertification are documented and the proper department is notified.

FACILITY INSPECTIONS

The DOES participates in the scheduled building walkthroughs each week. Under this program each building, excluding residence halls is inspected twice a year. The DOES focuses on possible safety/ building code violations as well as life safety (means of egress) and fire protection/ prevention issues. Ninety buildings were inspected this year.

The DOES in cooperation with Property Management inspect

works for them. Many times new furniture is purchased because the existing layout does not fall within good ergonomic parameters.

NOISE

In a new attempt to identify and resolve possible noise hazards on campus, a full-scale noise management program was conducted at the Animal Resource Center. This program included an initial noise measurement, noise dosimetry by an outside contractor, training, managing audiometric tests for 21 employees, PPE selection

Plant Safety Specialist meets bi-monthly with each zone and monthly with all of Plant. These meetings

CONTRACTOR OVERSIGHT

The Plant Safety Specialist carried out on-site inspections and monitoring of contractor safety practices and programs. Contractors completed more than 350 projects with oversight by a DOES representative. The types of contractors the University utilizes for large projects includes the Movers, Painters, Carpenters, Plumbers, Packers, Apprentices, Helpers, Drivers, Electricians, and Pipe-fitters, Roofers. CASE Plant personnel are utilized for small projects and maintenance. The interface between Plant, Construction Administration, technical assurance, and outside contractors on safety related issues has aided in

after an inspection of the site to check for adequacy and security places a fire watch 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 at a time. An SOP has been written for the program. Fifty-eight permits were issued during the year.

PROGRAMS

Various job functions were reviewed within Plant Services leading to the introduction of the Job Safety Checklist. This checklist will allow the Plant skilled tradesmen to be more efficient and safety oriented.

EPA AND WASTE DISPOSAL PROGRAM

ENVIRONMENTAL RELEASES

The Northeast Ohio Regional Sewer District (NEORSD) requires semi-annual reports on Best Management Practices (BMP) for minimization of mercury discharge for 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 2003 was filed on 2/24/2004.

Semi-annual water testing for nitrates and nitrites were performed in the dormitories on the southern half of the campus. The assessment included collection of 74 samples, summarizing of results, and distribution of reports to the facility coordinator for the dormitories. Regulatory levels were not exceeded.

Amounts of waste collected at CASE continued to increase during the 2003-2004 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 database assigns tracking numbers and facilitates accurate tracking of expenditure reporting. The database also facilitates evaluation of cost effectiveness of waste disposal. In addition, a regular audit of all manifests detects overdue manifests

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. Programs for safe and compliant operation of the Sanipak Waste Sterilizer were written in 2001. The Sanipak is surveyed on a monthly basis and quality assurance checks are carried out on a quarterly basis.

A total of 24,300 pounds of Infectious Waste was treated in the SaniPak Autoclave this year and transported by Waste Management Industries (WMI) to the American Landfill. The cost of treating this infectious waste is $0.05/ lb. This volume, however, is less that 2% of the amount of waste that is incinerated by Stericycle.

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 West Quad (Mount Sinai) and the main campus Complex. Currently the following are recycled on the campus:

Lead
Aluminum Cans
Paint
Batteries
Computer monitors (weighs up to 30 pounds and contains 8 pounds of lead)
Computer
Equipment
Fluorescent Bulbs

WASTE FACILITIES

The CASE Waste Facilities are used to segregate and prepare waste for disposal.

DISPOSAL SITE WASTE DISTRIBUTION

Waste Type	DOA 990	MILLIS	GREEN HOUSE	Wolstein	UCRC	CASC
Ballasts (PCB) (#)						9271
Ballasts (Non-PCB) (#)						6355
Bottles <1 gal				8	401	253
Bottles>1 gal	13467	3237				37
Unknowns (bottles)	39	109			8	
Incinerators (bottles)	293	91			20	6
Med East EB50 Cleanout ($)	8409					
Cylinders (large)	29	49				
Photo Drum	22	9	4			24
Batteries (#)						1204
Transformers (#)	132					
Pails (cans)	133	427				

Waste Type	Mt. Sinai	CASC Recycling
Ballasts (PCB) (#)	6673	
Ballasts (Non-PCB) (#)	197	
Bottles <1 gal	135	
Bottles>1 gal	5	

SUMMARY

DEPARTMENTAL STRENGTHS

We have 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 Western Reserve University. We have developed programs that meet or exceed regulatory requirements in most safety areas and proactively anticipate new safety requirements as new programs are promulgated. We also have excellent administrative support.

DEPARTMENTAL OPPORTUNITIES

Our programs continue to mature. We continue to enjoy an excellent interaction with other departments that are developing safety-related initiatives and outside agencies that are dedicated to improving the environmental quality in our facilities.

ACCOMPLISHMENTS FOR 2003-2004

Notable new accomplishments included:

Increased emphasis on posting of waste leakage logs in laboratories
Enhancement of safety programs concerning Plant Services.
Revision of Infectious Substance Training materials to reflect regulatory changes.
Creation of new Diagnostic Specimen training materials.
New security plan training for Select Agent and DOT programs.
Development of test questions for documentation of security plan awareness and general awareness after each DOT/IATA training.
Enhancement of emergency response capabilities.

GOALS FOR 2004-2005

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 address:

Increased involvement of all Safety Services team members in emergency response to keep skills and knowledge current and to provide back up during outside agency responses.
Further collaborative interaction with our partners inside the University and in our surrounding community to augment the SSOF Safety programs.
Development of an IAQ Manual for CASE.
Encouragement of the staff toward completion of national certification to facilitate career development and productive participation in community safety training initiatives.
Enhancement of training materials for all SSOF programs.
Increased cross training with the Radiation Safety Group to enhance the breadth of SSOF laboratory inspection and emergency response capacities.
Increased emphasis on enhancement of critical chemical and biological inventory information.

Prepared by Felice Thornton-Porter on 10/22/2004.
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