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ENVIRONMENTAL HEALTH AND RISK MANAGEMENT DEPARTMENT

ANNUAL REPORT

FISCAL YEAR 2008

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Environmental Health and Risk Management Department

ANNUAL REPORT – FISCAL YEAR 2008

MISSION STATEMENT

The primary purpose of Environmental Health and Risk Management (EHRM) is to support the University of Houston in its mission of higher education and research. The Department's efforts are directed at assisting the University in identifying environmental safety hazards and controlling such hazards through protective equipment, hazard mitigation methods, program development, purchase of insurance and other risk control and risk transfer techniques.

Environmental Health and Risk Management will keep abreast of relevant regulatory requirements in the areas of environmental compliance, biological safety, radiation safety, and risk management. Regulatory compliance will be achieved through clear communication of recommendations and interpretations regarding such regulations to the appropriate administrators within the University.

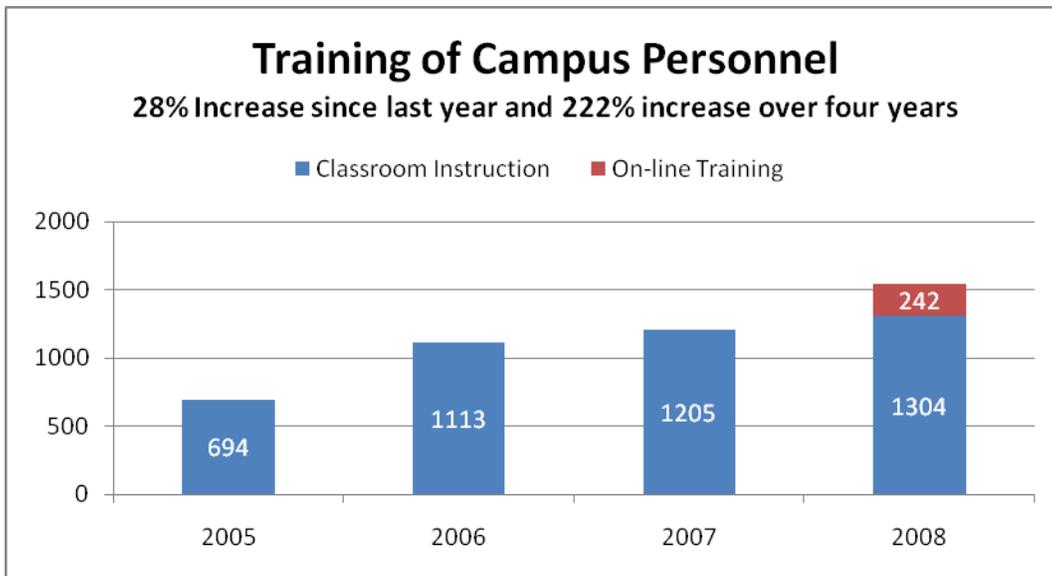
ROUTINE DUTIES AND FUNCTIONS

Training of University Community

Training of the University's faculty, students and staff is a key responsibility of the department. The most substantial goal of the FY08 was to transform several of the department's instructor-led training courses to web-based courses. This effort improves the efficiency of the department and provides the university community with a more convenient method of training. EHRM created a total of 10 on-line training courses this year with 3 planned to be completed in FY09. Most are multi-media programs including still photos shot on campus, videos made on campus and commercial videos (used with expressed permission).

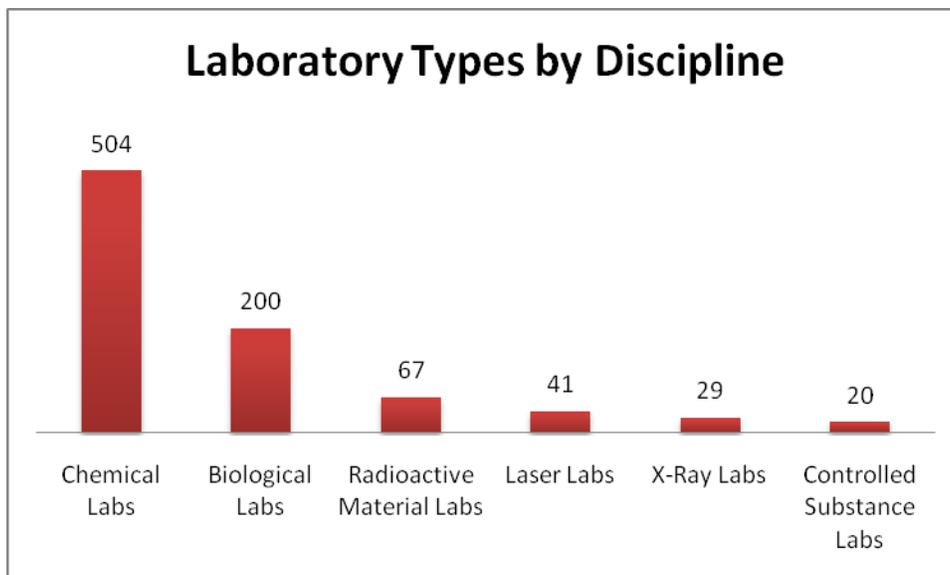
The classes offered and number of people trained is listed on the following page:

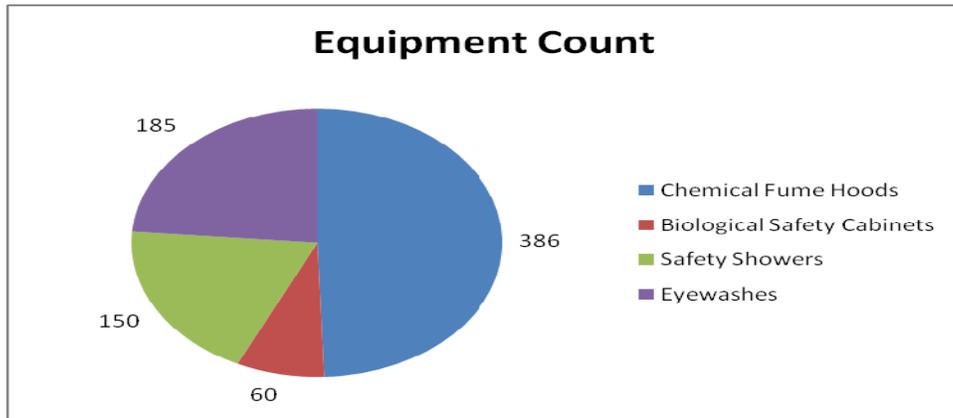
Instructor-Led Classes	People Trained	On-Line Training Courses	People Trained
General Laboratory Safety	323	Radioactive Material Refresher	69
Radioactive Material Safety	66	Laser Safety Refresher	9
Laser Safety	48	Bloodborne Pathogens Refresher	7
X-Ray Safety	45	Asbestos Awareness	4
Biological Safety	86	Environmental Compliance	11
Blood borne Pathogens	604	Indoor Air Quality and Mold	46
Hazard Communications	81	Hazardous Waste Procedures	8
Respiratory Protection	5	Workers Compensation	81
N-95 Respirator Fit Testing	5	UH System Insurance Program	7
Asbestos and Environmental Awareness	1	TOTAL	242
Hazardous Waste Procedures	25		
Forklift Safety	2		
High Profile Vehicle/Van Safety	0		
Workers Compensation	0		
UH System Insurance Program	13		
TOTAL	1,304		



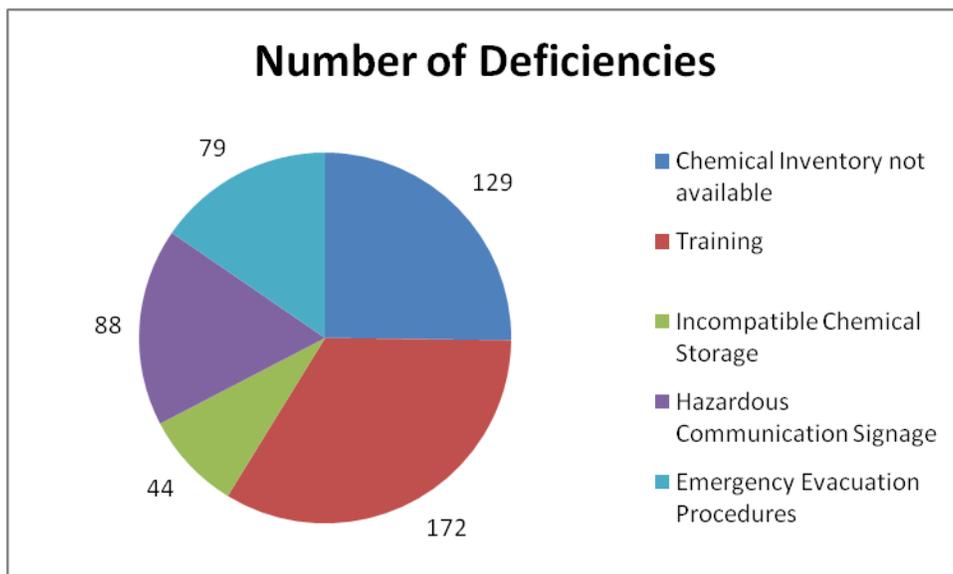
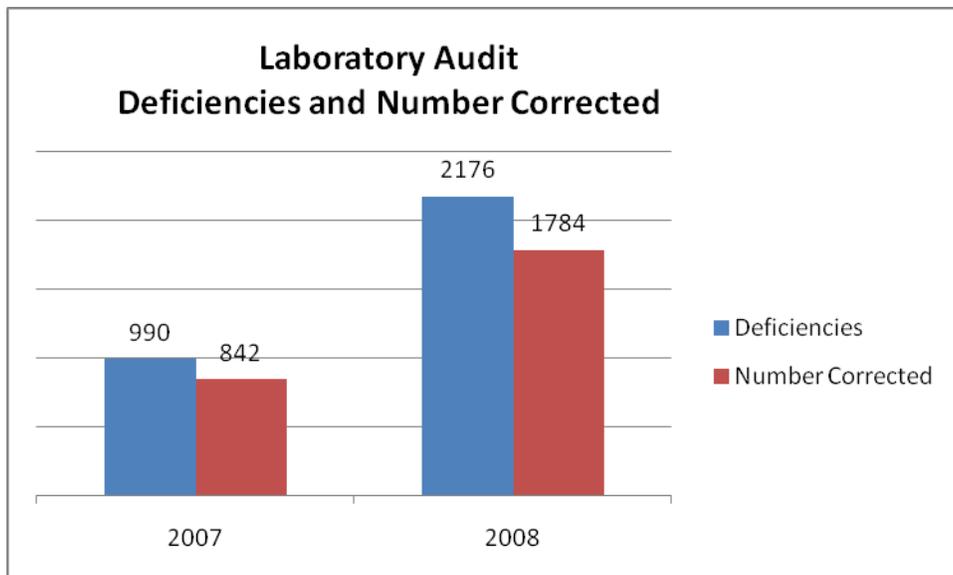
Laboratory Safety

The scope of the FY08 laboratory safety audits included 200+ Principal Investigators in 668 labs within 16 Buildings on campus. The list of identified labs for the next fiscal year is now at 800 labs. The statistics for FY08 completed audits by discipline and safety equipment are:





A total of 2,176 deficiencies were cited in 504 labs with 82.4% compliance for FY08. The laboratory safety program has developed in that the audits are more thorough than in the past, while maintaining a very high compliance rate:



Top 5 FY08 CLSP Deficiencies	Resolutions	Current Standing
Chemical Inventory not available	Laboratory Safety Officers (LSOs) facilitated the process by working with PIs in the laboratory to generate Chemical Inventories	All Identified Laboratories now have Chemical Inventories
Staff/Students have not attended the applicable safety training course	LSOs scheduled training sessions and sent reminders	In progress; EHRM created more training classes and online refresher training to accommodate
Incompatible chemical storage	LSOs assisted in correctly storing chemicals	In progress
Lack of Hazardous Communication Signage	LSOs risk assessment determines which hazard signs are needed	In progress; Most Laboratories now have Hazard Warning Signs
Lack of an Emergency Evacuation Procedure	LSOs sent PIs Emergency Evacuation Procedures Form obtained from the Fire Marshal.	In progress; PIs will fill in the appropriate meeting place on the Emergency Evacuation Procedures Form

EHRM provided special funding this year to support PIs with safety mounts for compressed gas cylinders, secondary containment for chemical separation, and additional laboratory signage. Plant Operations also provided Capital Renewal / Differed Maintenance (CRDM) funding of approximately \$40,000 to bring the University into compliance with a safety shower and eyewash requirements. The project was a result of deficiencies found in last years audits and the project is currently still in progress.

EHRM successfully used student workers to support the laboratory safety program through special projects which included:

- Laboratory Safety PIs Electronic Files Organization
- Identification of Additional Labs and Research Areas
- Identification of Labs without Signage and Develop Signage
- Update of Labs Radiation Signage
- Financial Chargebacks of Services Associated with Laboratory Safety

Research Support

Health Physics Services

EHRM personnel approved, received, surveyed, and distributed 30 radioisotope packages.

A total inventory of all radioactive material located on campus was performed every six months. The Radiation Safety Officer also monitored the special nuclear material inventory at the University that is listed with the Nuclear Materials Management Security System.

Forty-two (42) annual survey meter calibrations were completed.

Radiation badges were issued including 113 whole body badges, 71 ring badges, and 116 area/public dose monitors. Dosimetry is conducted on a quarterly basis.

A total of 235 radioactive material laboratory surveys and wipe tests were performed on active Principal Investigators laboratories on a quarterly schedule. Only minimal contamination was found.

Consultative and Technical Support

EHRM provided consultative support to assist new principal investigators with orientation and lab setups. Technical support was also provided for various research projects and experimental operations of radiation principal investigators.

Special research involving the use of radiation sources and devices was conducted by University faculty and students at national laboratories and international facilities/sites. The Radiation Safety Officer provided specific authorizations and support for the researchers as requested by these institutions.

Controlled Substances and Dangerous Drugs

The Health Center Pharmacy and 22 principal investigators are authorized by the United States Drug Enforcement Agency and the Texas Department of Public Safety to order clinical and non-clinical Controlled Substances and Dangerous Drugs. EHRM personnel approved, received, logged, and distributed all non-clinical purchases of Controlled Substances and Dangerous Drugs for a total of 23 orders. Controlled Substances and Dangerous Drugs were inventoried every six months. Expired Controlled Substances and Dangerous Drugs are returned to the manufacturers or periodically destroyed under the review of the University Of Houston Department Of Public Safety.

Chemical Safety Services

This year chemical inventories for all laboratories were obtained as part of the FY08 departmental goals. Many Principal Investigators (PIs) generated the chemical inventories for their labs, but most had to be converted by EHRM personnel into a useful and standardized electronic format. EHRM personnel created the chemical inventories for all other PIs who did not respond or needed help. This was a tedious process that took many man-hours of work.

EHRM personnel also started helping PIs with chemical incompatibilities identified in the laboratory safety program. This effort was widely received and greatly appreciated. This directly affects employee safety in the labs by proactively preventing incidents and minimizing hazardous situations.

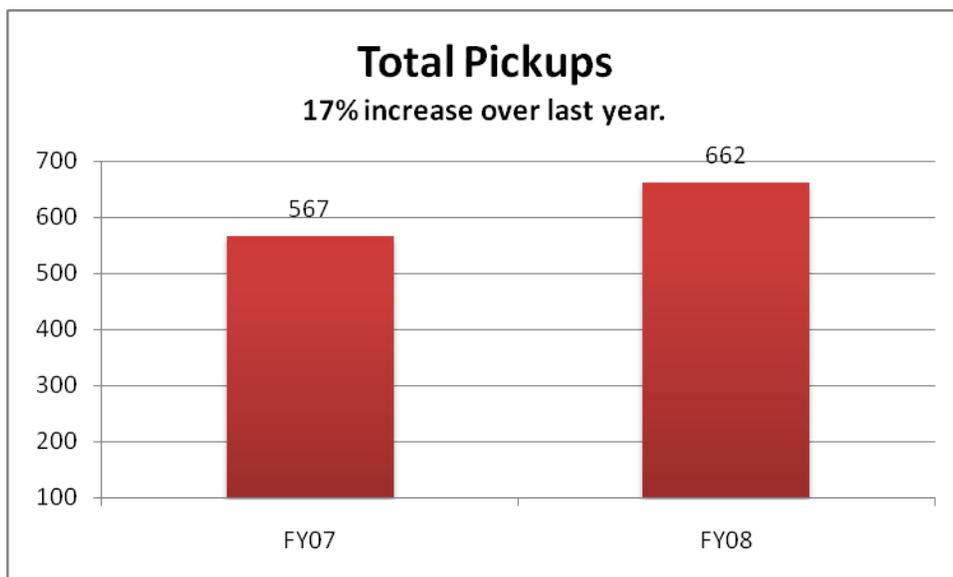
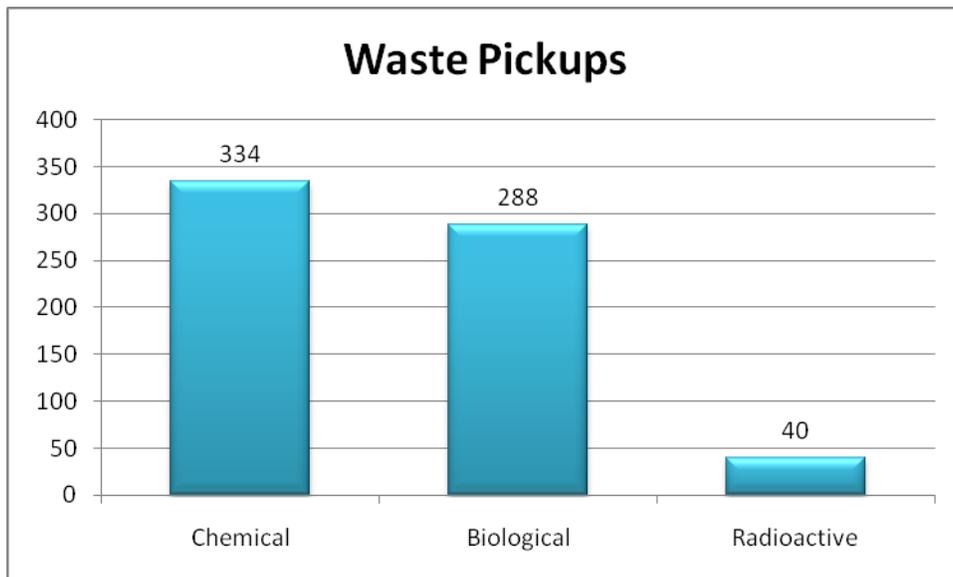
EHRM personnel helped PIs with hazardous materials shipping. Assistance with shipping documentations and identification of hazards were provided. Outside contractors were contacted for Certified Shippers authorizations and signatures.

Hazardous Waste Management

The Environmental Protection Agency (EPA) is the federal agency that establishes minimum regulations for waste, and the state agency, Texas Commission on Environmental Quality (TCEQ), both regulate the disposal of waste generated at the University. Depending on the classification of the waste, there are significant requirements that must be met to maintain compliance. The University continues to expand its research and teaching activities which leads to the generation of increased waste material.

The Environmental Health and Risk Management Department (EHRM) completed the following waste pick-ups from the main campus and the College of Pharmacy located in the Texas Medical Center:

- 334 chemical waste pick-ups
- 288 biological waste pick-ups
- 40 radioactive waste pick-ups



Aside from the requested pickups, the group also performed additional waste activities. Two lab clean outs, one in the Fleming Building and one in the Science Building were coordinated by the group. The clean out in the Science Building lasted for 2 days and was the largest in recent history.

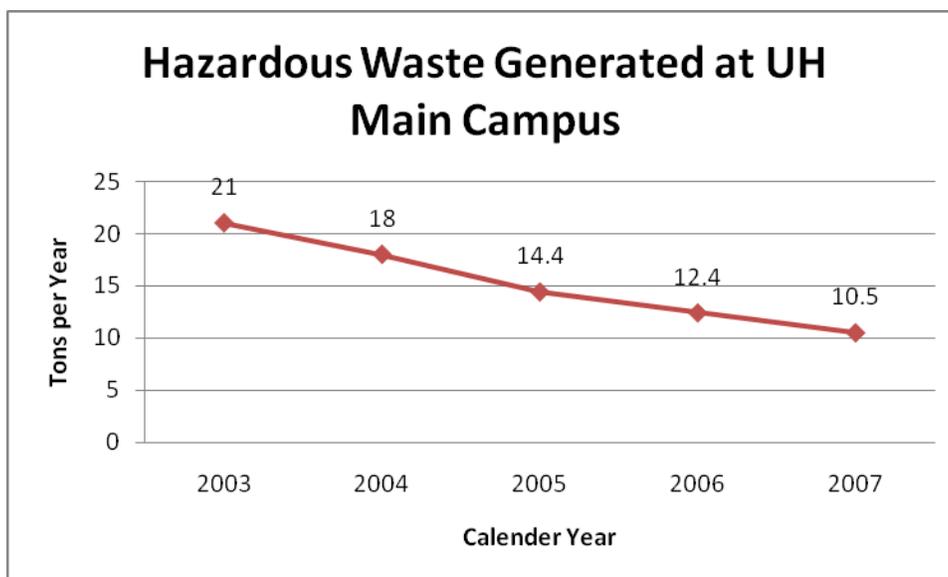
In addition to the chemical and biological waste, 72 grease and lint trap pump-outs were conducted throughout the main campus. The total amount of waste material was approximately 106,924 gallons. This was a slight decrease from last year's total of 123,538 gallons of waste. The City of Houston changed its' grease trap permit notification procedures and there was confusion on the grease trap renewal process. This caused a decrease in grease trap pump outs in August 2008. EHRM has addressed this situation and is currently renewing all the annual grease trap registrations.

EHRM maintains two buildings for the storage and disposal of waste, the Chemical Waste Building and the Radioactive Waste Building. Checklists are reviewed monthly for equipment maintenance and regulatory requirements. EHRM must continually handle, repackage, and reorganize waste along with maintaining adequate supplies for campus support.

Environmental Protection

Pollution Prevention Activities

The University continues to generate a significant amount of hazardous waste per the TCEQ regulations and is classified as a large quantity generator. As a result of our large quantity generator status we are required to submit a Pollution Prevention (P2) Plan covering a five consecutive year period. Pollution prevention plans consist of projects and procedures that generators implement in an effort to reduce the total amount of hazardous waste generated and/or reduce the relative toxicity of the waste generated. Currently we are in our P2 Plan that covers the calendar years 2006 – 2010. In calendar year 2007, the total amount of hazardous waste shipped off campus continued reduction as it has for the past several years. At the same time the number of chemical waste pick up requests continued increase. The graph below is compilation of the number of tons per calendar year of hazardous waste generated on campus.



EHRM is proud of our success with our hazardous waste minimization program. However, with the increased level of research activity, and since we have already implemented several waste minimization strategies, the total amount of hazardous waste generated may start increasing in FY09.

We will continue our prevention projects which have contributed heavily to our success. The increase in bulking compatible chemical wastes into a single drum and thereby reducing laboratory over pack waste drums, and the installation of a silver recovery system for photographic fixer waste from the College of Art are the two programs yielding the most success. In addition, we had some success with our chemical swap (CHEM SWAP) program, which is designed to share (unused) chemical compounds within the University community, rather than discarding them. The group performed 3 swaps in FY08 involving ~30 liters of chemical compounds.

We also continued to recycle used oil via the used oil tank connected to the Auto Shop. Three drums of used oil filters were recycled and ~114 batteries of various sizes were picked up on campus and brought to Interstate Batteries for recycle. We were also able to ship off several 5 gallon containers of R113 (Freon) for recycle rather than disposal through our chemical waste vendor.

Spill Response and Clean-Up

In FY08 the group responded to 3 spills from vehicles around the campus. In addition, there were 2 responses to mercury spills in the Fleming Buildings and Science and Research II Building and a response to an oil spill at the Engineering Annex. The group also assisted with an arsenic spill in Science and Research I Building (SRI) in conjunction with the Lab Safety team. This brings the total to 7 spill responses plus addressing additional requests for emergency grease trap service, disposal of used hydraulic oil from elevator failures, and the presence of biological waste bags in the dumpster.

Service to UH & System Components

The Environmental Compliance Manager continued to represent EHRM during build out meetings for the SERCC building. His involvement is expected to continue and increase in FY09 and main emphasis is on laboratory design issues (fume hoods, chemical storage and etc.). He responded to requests concerning compliance issues for several new buildings on campus as they arose and assisted with real estate transactions as requested. In addition he responded to request from UH Downtown concerning storm water issues, asbestos abatement contractors, and emergency generator operation requirements.

Plant Operations Indoor Air Quality (IAQ) Team Support

IAQ complaints comprise the bulk of incident investigations performed by EHRM. The Plant Operations IAQ Team tries to address the root causes of re-occurring IAQ problems. The Environmental Protection Manager represents EHRM on the team and leads the efforts in addressing IAQ problems that arise. In FY08 IAQ surveys were performed at E. Cullen and the University Business Park. There was also a specialized survey for the Charter School located in Melcher Gym that was undertaken to assess chlorine levels in the vicinity of the pool in FY08. The results showed the levels of chlorine to be less than the instrument's detection limits. In addition, improvements were made to trailer 12 in the Law Center Village after a request was made to EHRM.

Spill Prevention Control and Countermeasure (SPCC) Plan Revision

One of the EPA rules that applies to the University is the SPCC Plan preparation for facilities that store greater than 1,320 gallons of oil and oil products (gasoline, diesel, oil, etc.). The University currently stores ~ 42,000 gallons and has plans to add additional storage, therefore is required to have an SPCC Plan. SPCC Plans have a five year life and then need to be reviewed and certified by a Professional Engineer (PE) in Texas. EHRM worked with a Professional Engineer and reviewed all of our current tanks on campus and a new 5 year plan was delivered to the University in July 2008. This plan will cover the University for 2008 – 2013.

Institutional Committees

Radiation Safety Committee

The Radiation Safety Committee, the Radiation Safety Officer, and the Vice President of Research work together as required by the Texas Department of State Health Services to oversee and manage the Radiation Safety Program. The Committee must meet a minimum of five times each year. As part of the annual review of the Radiation Safety Program, The Radiation Safety Officer reports about special projects, radiation incidents, and highlights of routine radiation safety activities to the Committee. The Radiation Safety Officer drafts the regulatory required annual report of the Committee that must be reviewed by senior university administration.

Radiation Safety Committee approvals:

Discipline	Applications	Amendments
Radioactive Material	0	75
X-ray	3	30
Laser	9	22

Radiation Safety Program Scope:

Discipline	PIs	AUs	Labs	Machines
Radioactive Material	29	69	70	N/A
X-ray	19	84	28	38
Laser	38	61	55	117

(Principal Investigators = PIs & Authorized Users = AUs)

Institutional Biosafety Committee

The National Institutes of Health (NIH), through the Office of Biotechnology Activities, regulates the use of recombinant DNA molecules in research. Universities receiving NIH funding are required to have a registered Institutional Biosafety Committee (IBC) to comply with NIH requirements. The current IBC Committee roster now has representatives from the Department of Academic Affairs, Department of Biology and Biochemistry, Department of Health and Human Performance, College of Pharmacy in the Texas Medical Center, College of Optometry, and the University of Houston Downtown.

The Institutional Biosafety Committee met five times to discuss and approve 53 Memorandums of Understanding and Agreement (MUAs). Twenty-three (23) of these MUAs were new submissions and 30 were renewals. The program currently has 40 registered Principal Investigators and a total of 48 active projects of which 18 are at Biosafety Level 1 (BSL-1), and 30 are at Biosafety Level 2 (BSL-2). This is the fourth year of the current structure of the Biosafety Program.

The MUA approval process was augmented and enhanced by the implementation of a Subcommittee review. The process expedites the approval process and helps ensure that research is being performed in the safest possible way.

Institutional Animal Care and Use Committee

The Biological and Chemical Safety Manager participates in the Institutional Animal Care and Use Committee (IACUC) to provide expertise in the risk assessment of all safety aspects. The Manager attended monthly meetings and two semi-annual inspections of the animal facility and animal research laboratories. The Biological and Chemical Program has partnered with IACUC in providing training, written safety recommendations for specific procedures, and monitoring of programs for compliance. The Biological and Chemical Safety Manager, using the Laboratory Safety Program as a tool, has initiated an audit program which includes Animal Care Laboratories and Procedure Rooms.

Institutional Compliance Committee

The Institutional Compliance Committee meets quarterly to discuss calls made to the University's confidential reporting hotline and help the committee members stay focused on their regular tasks of updating their risk matrices and implementing effective control measures.

Regulatory Affairs

Regulatory Reports

Environmental Protection

A number of required reports were submitted on behalf of the University. These were as follows:

- Stage II Vapor Recovery Exemption Report filed in January 2008. The University can claim an exemption from vapor controls on the gasoline pump itself (known as Stage II Vapor Control) if less than 10,000 gallons is pumped per month.
- Texas Tier II report filed in January 2008. This is an inventory of hazardous chemicals for emergency planning purposes.
- Annual Waste Summary for the main campus and the College of Pharmacy (TMC) filed in January 2008. This is a summary of regulated waste generated at both locations.
- Underground Storage Tank Registration & Self Certification form filed in March 2008. This is an annual report for underground storage tanks at General Services and Police.
- The Nitrogen Oxides (NO_x) Cap and Trade report filed in March 2008. This is a summary of NO_x emissions from the main campus.
- Pollution Prevention Progress Report filed in June 2008. This is required for the main campus due to our large quantity of generator of hazardous waste status.

Regulatory Licenses, Registrations, and Permits

Radiation Safety

The Radiation Safety Officer maintains the Radioactive Material Broad License, the X-ray Registration, and the Laser Registration with the Texas Department of State Health Services for the University. All three require a periodic technical review and renewal. Amendments must be submitted to Texas Department of State Health Services to make technical, procedural and administrative changes. This year the X-ray Registration was amended for changes in x-ray machine numbers and categories plus approval of the annual online x-ray safety refresher training. The Laser Registration was amended for laser changes and an address update plus approval of the annual online laser safety refresher training. The Radioactive Material Broad License was amended to reflect the change in the Radiation Safety Committee Membership.

EHRM coordinated the permit process for Dr. Zhenkang Xu, to secure approval from the Animal and Plant Health Inspection Service (APHIS) to receive materials from Lawrence Livermore Laboratory.

Certificates of Compliance and Environmental Questionnaires, as required by government funding agencies, were reviewed and approved on behalf of Dr. Bikram, Dr. Mohanty, Dr. Salim, and Dr. Byun.

Regulatory Changes

Biological Safety

Recent media attention has placed a spot light on the use of biohazard research leading the NIH to issue a second notice of guidance on Institutional Biosafety Committee (IBC) minute records. The University of Houston's IBC has reacted positively to this guidance. The Biological Safety Officer (BSO) has ensured that all information needed to satisfy this new guidance is presented at each meeting and recorded in the minute records.

The BSO has trained several PIs in the rDNA guidelines, as well as, IBC members.

Chemical Safety

The Department of Homeland Security expressed concerns this year with certain Chemicals of Interest (COIs). A list of over 200 chemicals with specific quantities was given to UH to review. After comparing chemical inventories of Principal Investigators with the list, UH only had approximately 130 chemicals to investigate. After using the appropriate criteria, it was determined that UH did not meet any of the quantities for the COIs and a Top Screen report was not necessary. UH will periodically reevaluate its position in terms of the reporting requirements for COIs.

Radiation Safety

The Texas Department of State Health Services routinely makes changes to the radiation regulations. These changes impact the Radiation Safety Program administratively, operationally, and procedurally. The Radiation Safety Officer attends stakeholders meetings and makes comments for the University on significant proposed legislation of radiation regulations. The Radiation Safety Officer also receives confidential notices from the Nuclear Regulatory Commission prompted by the Department of Homeland Security on the security of radiation sources and devices.

Environmental Protection

The City of Houston is the regulatory agency for the University's grease, lint, and grit traps on campus. As noted in last year's annual report, the City of Houston, issued a new ordinance that now requires an annual registration for grease, lint and grit traps, along with a minimum clean out schedule. Grease, lint and grit traps are all plumbing devices associated with food establishments (grease), laundry facilities (lint) and vehicle wash down areas (grit). Fortunately, we already had a regular pump out schedule that met the City of Houston's requirement, so the impact of the new rules, aside from the \$50 annual registration fee, is expected to be minimal.

Regulatory Recordkeeping

EHRM maintains regulatory records for all disciplines and areas of the Department. The records are indexed and organized by topic, building, or discipline. This year student workers scanned many file cabinets of asbestos files for archiving. EHRM specifically maintains principal investigators files which contain all applications, amendments, associated documents, and audits. Many operational records like the health physics records are required by law to be maintained for a specified period of time and subject to state inspection. Therefore, all such records must be kept up to date, accurate, complete, and inspection-ready without exception. Medical, workers' compensation, and controlled substances files are confidential and must be kept locked from unauthorized access.

Regulatory Inspections

A state inspection of the Radioactive Material Broad License is expected every 2-3 years by the Texas Department of State Health Services. The X-ray and Laser Registrations are inspected less frequently.

The Texas Department of State Health Services conducted an unannounced Tier Two and Hazard Communication inspection on October 24, 2007. The inspection consisted of a records review for Tier Two reports, Hazard Communication Program elements, and tour of several campus facilities. These included the General Services Building, Engineering Annex, and the Fleming Building. To date no violations or concerns have been communicated to EHRM concerning the inspection.

A City of Houston Environmental Investigator made an unannounced site visit on August 24, 2008. He was interested in a grit trap and a lint trap permit that he thought was not renewed. EHRM had renewed these two along with four other lint trap permits and was able to produce the actual permits that were mailed.

Risk Management

Insurance Management

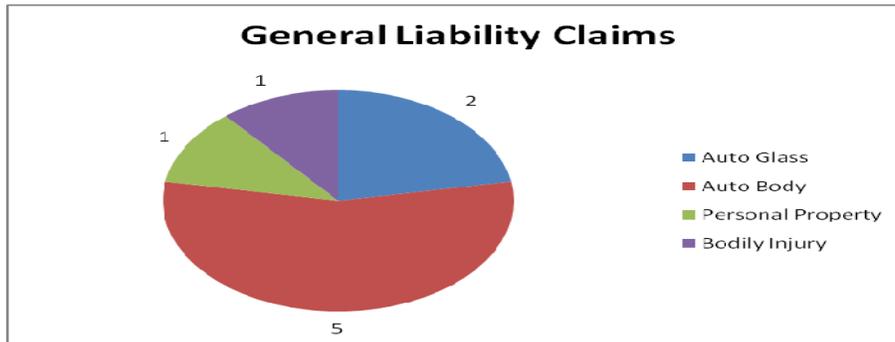
We were able to reduce the number of insurance policies and combine others with similar risks into one professional liability policy. The transition was efficient and plans were initiated to change the renewal date for the insurance program to a common March 1st date for the primary purpose of removing the property insurance negotiations out of the hurricane season. Due to our desire to minimize cancellation penalties and underwriter preferences, some policies were cancelled and re-written, some were left in place and re-written with 18 month terms and some were endorsed with 6 month extensions. The result will be common renewal dates by March 2009 but it involved much more administrative time than normal during the fiscal year.

The major change in this policy year, outside of the renewal date change, was the University entering into the State Office of Risk Management's (SORM) Property Insurance Program. The University had managed its own property program in past years and was granted waivers by SORM, however this year, the requested waiver was refused and participation was required by SORM.

As part of the property renewal all UH System component campuses were visited by the Risk Management Administrator. This will be recurring on an annual basis. Deficiencies were noted on several campuses, but most were minor in nature and related to inspection issues. The total insured values for all the campuses increased to \$2.1 billion for FY08. The revised property values were attributed to campus visits and a better understanding of exposures.

General Liability Claim Investigations

Eight (8) premises liability investigations occurred; they were premises liability claims of damaged equipment or failure to maintain equipment. The most frequent claims were from Grounds employees projecting stones at vehicles from lawn mowers and string trimmers. The total cost was \$10,720.90. One bodily injury claim was investigated and paid, \$1,248.63.

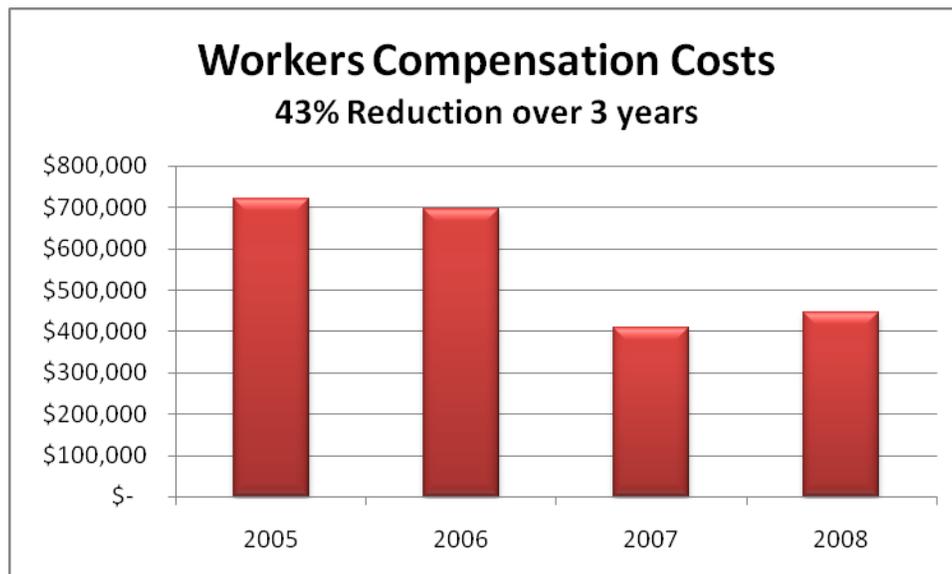


Automobile Liability Claim Investigations

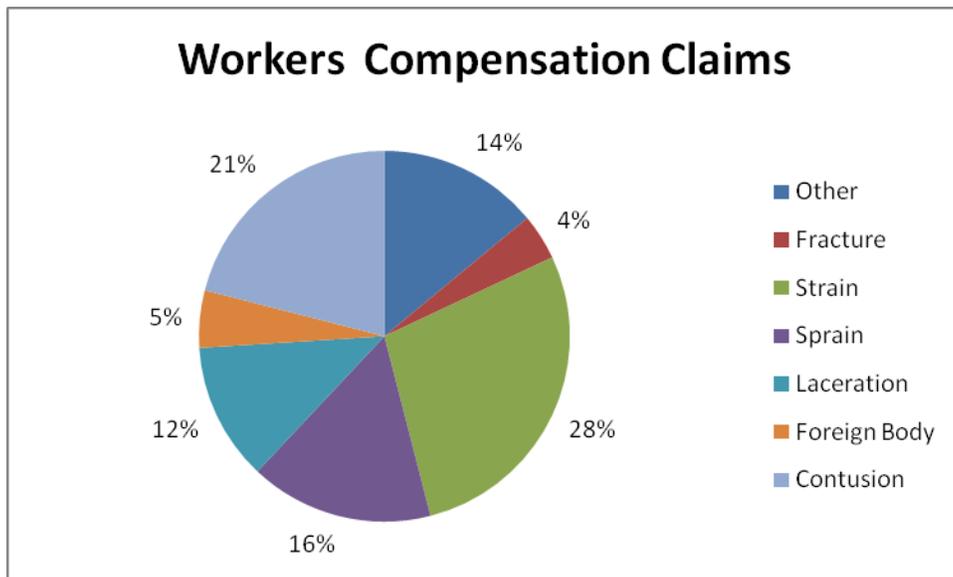
There were 9 automobile liability damage claims filed against the University. The total dollar amount paid by the University was \$19,261.13. With the addition of higher deductibles and having departments pay a portion of the deductible out of their operating budgets, there has been a slight reduction in the number of accidents. Three automobile liability damage claims were filed by the University against the insured driver.

Workers' Compensation Claim Management

One hundred sixty three (163) workers' compensation claims were filed with EHRM. One hundred five (105) of those claims were filed with the carrier due to medical treatment sought and lost time from work. Eight (8) were denied, 65 resulted in lost time, and 40 were resolved without lost time. From the claims resulting in lost time, four currently continue to be off work. EHRM continues to manage and monitor these claims due to the continuing financial obligation under the law, and strives to work with adjusters to close these claims as it becomes possible. The total claim cost was \$445,726.12.



The most frequent types of injuries have been strains and sprains. This has consistently been the case over the past several years. The breakout of claims types is below:

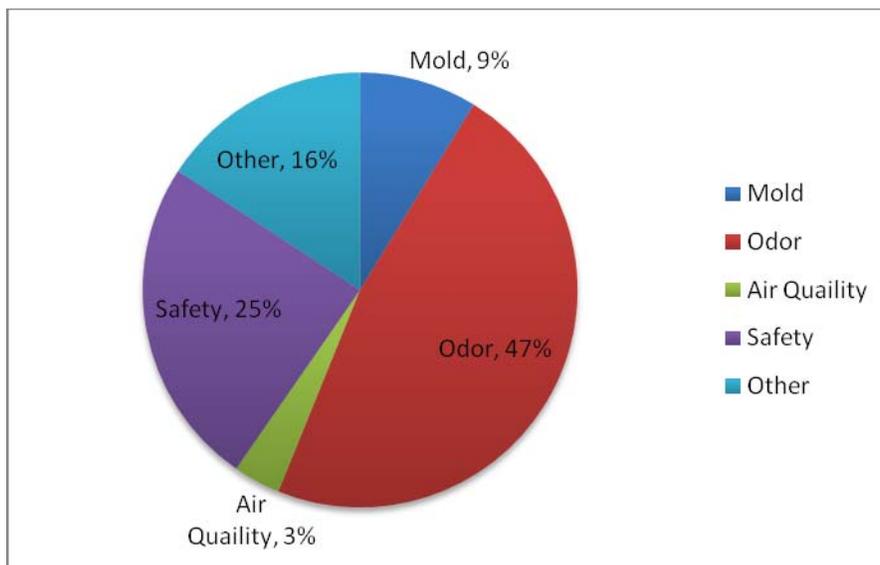


Return-to-Work Program

The Return-to-Work Program was implemented several years ago and has continued to be successful. It was designed to assist employees sustaining compensable injuries to transition back to full-time employment. Of the 105 injury claims filed, 25 involved return-to-work coordination. Several departments benefited from this program as well as the injured employee. When the employee returns to work in this program, he or she draws their regular rate of pay for the number of hours worked instead of the reduced workers' compensation benefit. In addition, the employee performs productive work for the University.

Incident Response

There were 57 total incidents entered into Facility Focus that were directed to EHRM. The majority (32) were indoor air quality (IAQ) related. The other incidents consisted of spills and gas odors that were routed to the Plumbing shop when possible. The details are listed below.



Motor Vehicle Record Evaluation

EHRM checked the driving records of 1,043 campus drivers. All met acceptability criteria except 9, which were referred to appropriate management for appropriate actions.

Professional Development of EHRM Staff

Since environmental health is a highly regulated technical area, professional development of staff is a priority of the department. As such, 35 % of the department's operational budget is dedicated to professional development and all technical members of the department participate in formal professional development. The formal training programs the department's staff participated in are as follows:

- Campus Safety, Health, and Environmental Managers Association (CSHEMA) conference – St. Louis (A Technical Session on the Comprehensive Laboratory Safety Program was presented by EHRM) (3 employees)
- 40 hour Asbestos Abatement Contractor/Supervisor course - Houston
- 8 hour Hazardous Waste Operations and Emergency Response - Houston (11 staff members).
- Hazardous Waste - Houston
- American Biological Safety Association Conference – Nashville (2 employees)
- Molecular Biology Course - Nashville
- American Society of Safety Engineers Professional Development Conference – Orlando
- Strategies for Today's Biosafety Officer Course – Nashville
- Laser Institute of America Laser Safety Officer with Hazards Analysis Course – Boston
- Radiation Safety Technician Course at Radiation Safety Academy – Gaithersburg
- IATA Training for Dangerous Goods Shipping for Air Transportation – Houston & Beaumont (7 Employees)
- Texas Radiation Regulatory Conference – Austin
- National Nuclear Safety Workshop – Houston
- Health Physics Society Mid-Year Conference – Oakland
- Radiation Safety Officer Course with LSC Training Option at Radiation Safety Academy – Gaithersburg, MD
- Texas Medical Center RSOs Seminar on Radioactive Material of Concern – Houston
- Greater Houston Industrial Hygiene Council Meeting - Houston.
- 8 hour Hazardous Waste Operations and Emergency Response - Houston (11 staff members).
- Hazardous Waste Refresher - Houston
- Laser Safety Class

In-Services

The Environmental Health and Risk Management Department has always required staff to present training on departmental procedures, special topics of interest, and topics within their areas of expertise. This has provided cross training between areas, understanding of each others jobs, and proven to be beneficial for the whole department. In addition, all staff members relate their immediate duties and focus during the in-services, which brings a cohesion to the Department, allows for sharing of information, and lets everyone appreciate what the others are doing. Twenty-two (22) in-services were held during the year.

ADDITIONAL ACCOMPLISHMENTS AND ACHIEVEMENTS

This year there were personnel changes in one of the radiation safety specialty positions, the biological safety specialty position, as well as a new Biological and Chemical Safety Manager. The secretary to the Director was promoted to another position on campus and had to be replaced. This turnover in staff is the most the department has seen in several years. In addition, the Environmental Protection Specialist was gone on Military Leave for a substantial number of weeks. Despite the heavy turnover, as was evident from earlier sections of the report, FY08 was a very productive year for EHRM.

Biological Safety Cabinet Contract

A new program to centralize control for the certification of bio-safety cabinets (BSC) was successfully implemented. This project was implemented to increase compliance with annual BSC certifications, reduce the burden on the Investigator and to create a standard level of safety across all departments.

Fluorescent Light Bulb Audit

During December 2007, an audit of Building Maintenance's fluorescent light bulb disposal practices was performed to ensure that the University was in compliance with Texas Commission on Environmental Quality (TCEQ) Waste Regulations for Hazardous Lamps and Mercury-Containing Equipment in Texas. Many lamps and mercury containing equipment (MCE) contain toxic substances such as lead and mercury that pose a threat to public health when not properly managed. EHRM noted a concern with the labeling requirements of this rule and corrective action was taken in conjunction with the Building Maintenance Department to resolve the concern.

Ammonia Handling Protocol in Engineering II Building

The Environmental Engineering Department sought guidance from EHRM in the handling of ammonia gas in room E411 of the Engineering II building. EHRM met several times with Dr. Clifford and Dr. Chellam to satisfactorily resolve the problem. The concern was a potential failure of the ammonia supply container and ability to exhaust out the resulting ammonia gas. Through a series of calculations and meetings a compromise was reached that should ensure the safety of the lab occupants as well as those nearby.

Storm Water Compliance

The United States Environmental Protection Agency (EPA) has promulgated rules, commonly known as the Clean Water Act, to prevent discharges of pollutants into the waters of the United States. These rules have been amended several times and now include storm water discharges. The goal of these amendments is to prevent discharges of pollutants during and after periods of heavy rainfall (storm) events.

EHRM, in conjunction with an engineering firm developed a reference manual for storm water management during construction activities, a map of all the major storm water outfalls on the campus, and checklist for UH project managers to ensure compliance with applicable regulations. This information was added to the departmental web site and a presentation was given to Facilities Planning and Construction staff. Plans are to share information with UH system representatives in FY09.

Acid Neutralization Tank Bypass Project

The main campus has several science buildings which have acid neutralization tanks (or chambers) that were installed as part of the initial building construction. The idea behind these tanks was that acidic waste from laboratories would be poured down a drain and be neutralized typically by a bed of rocks, (limestone), before being discharged to the regular sewer system. EHRM researched the background on the installation of these tanks and found out that there are no regulatory requirements to have such tanks in a science building. Furthermore with the University's policy of picking up chemical waste for disposal (i.e. no pour policy), these tanks become more of a problem to maintain than providing any beneficial acid neutralization. In the past, EHRM's chemical waste vendor has pumped out some of these tanks and found sewage waste.

EHRM received funding from Plant Operations to bypass acid neutralization tanks at Science Buildings. The project started in the Houston Science Center (HSC) Building, which had two actual cylindrical chambers filled with lime stone rock with an inlet and outlet. These tanks had a history of overflowing requiring Plant Operations to pump out and shovel through the rocks to the blockage. After completing a visual assessment of these tanks, the inlet and outlet pipes were removed from the tank and a bypass pipe was placed on top of the former tank. The project then moved on to the Science and Fleming Buildings. A visual assessment of the acid neutralization tanks found chambers (not actual tanks) with little or no limestone rock remaining. During this assessment, several long traverses of damaged pipe were noted along the Fleming Building and identified as the likely cause of previous sewage back-ups. The remaining funds were spent on replacing these lines. With the completion of this project, historical problems associated with acid neutralization tanks at the HSC and Fleming Buildings were eliminated.

Vehicle Mileage Booklet

Historically the State of Texas supplied fleet vehicle mileage log booklets to state agencies such as the University. In FY 07 they ceased production of the booklets thereby forcing state agencies to create their own logs. The Fleet Coordinator worked with Printing Services and developed a log booklet for University vehicles. The new booklets are currently available by request from Printing Services.

Building Safety Inspections

Building safety inspections were begun this year by the Risk Management Administrator. Areas inspected include general building safety, fire prevention and occupational safety hazards. When fully implemented one building per month will be inspected and a report issued to the Department or College responsible for the facility. Where applicable the Risk Management Administrator initiates work orders for safety issues that can be corrected by Plant Operations. Three inspections were performed this year in Theater Arts, Architecture and the Fine Art Building. In all cases improvements were noted concerning safety and health and the staff in those departments appreciated the assistance from EHRM.

Biological Safety Shipping Training

The International Civil Aviation Organization, International Air Transport Association, 49 Code of Federal Regulations and The U.S. Department of Transportation require all Infectious Substances packages be shipped by a trained individual and in a manner that minimizes risks of public exposure. EHRM has implemented a training program for laboratory specific Infectious Substance shipping and trained 2 laboratory groups.

Laboratory Signage

The campus wide laboratory signage program has increased the “hazard awareness” associated with the Laboratory Safety program. New signage is generated by the student workers from the laboratory assessments performed during laboratory safety audits. Existing signage is continually being updated as changes to the labs are discovered. Signage templates with standardized icons have been created that can easily be manipulated. The signs are produced and laminated in-house which dramatically reduces costs.

Honors

Lisa Benford was recognized with Administration and Finance’s PEP Award for her successful implementation of the Bloodborne Pathogens Program.

Otu Inyang and Lisa Benford submitted an abstract on the Comprehensive Laboratory Safety Program to the Campus Safety and Environmental Management Association (CSHEMA). The abstract was accepted by CSHEMA and was presented by Lisa at the 2008 Conference in St. Louis Missouri.

Mark O’Riley’s position of Hazardous Waste Coordinator, was upgraded from a grade 67 to a grade 69 based on the increased level of complexity and responsibilities. His title was changed to Environmental Protection Officer to reflect the new responsibilities.

Sanjay Shiwprasad’s position of Environmental Safety Technician, was upgraded from a grade 64 to a grade 67 based on the increased level of complexity and responsibilities. His title was changed to Environmental Protection Specialist to reflect the new responsibilities.

FISCAL YEAR 2009 GOALS

- Revise the Radiation Safety Manual and Operation Radiation Safety Manual to include regulatory changes.
- Development of an online General Laboratory Safety Course
- Development of the Recombinant DNA Principal Investigator online Training Course
- Development of the annual on-line X-ray Safety Refresher Training Course
- Increase the level of awareness among UH System personnel at other component universities concerning major environmental regulations such as storm water, air quality and regulated waste disposal, which could impact their facilities.

UNSUPPORTED ACTIVITIES

This year UH participated in the Campus Safety Health and Environmental Management Association's (the national association for university safety professionals) benchmarking study. Seventy-seven universities participated in this year's study, the largest group being public research universities. The result of the study showed that the UH EHRM staff size is 33 to 51 % the size of its peer group, depending on the benchmark used. A few of the most relevant benchmarks are as follows:

	Average Research University	UH
EHS FTE's per 1,000 faculty/staff/student FTE	0.97	0.32
EHS FTE's per million NASF (All buildings)	3.91	1.72
EHS FTE's per hundred thousand NASF (Labs)	3.59	1.82

The department's emphasis in environmental health is in the area of research support, specifically laboratory safety, with few resources dedicated to other aspects of environmental health and safety. This is necessary because radiation safety is heavily regulated and biological safety also has significant requirements that would impact funded research very negatively if the requirements are not met. The unsupported activities are as follows:

Environmental Protection

Regulated Waste

- Conduct audits of a select group of generators on campus, such as labs, UC, and RLH to verify that regulated waste is being properly disposed of
- Perform verification testing on autoclaves used for biological waste to ensure they are operating properly
- Audit construction and renovation project waste disposal practices for compliance
- Track down and charge back contractors who leave regulated waste behind for disposal
- Promoting enhanced recycling throughout the campus and trying to maximize recycling for the University through emerging technologies
- Regularly audit the University's waste vendors and recyclers facilities for compliance

Air Emissions

- Maintain the best available control technology to minimize air emissions on our permitted and permit by rule emission sources
- Audit the run meters on the emergency generators for accuracy
- Measure and verify new boilers and emergency generators can meet the emission standards that are claimed for the specific unit
- Regularly auditing refrigerant use and recovery methods around campus

Spill Prevention Control and Countermeasures (SPCC) Plan

- Perform routine audits of all the diesel generators

Tier II

- Institute a chemical tracking system to secure a high level of confidence in the University's chemical purchase and storage practices and lead to more detailed Tier II report

Grease, Lint, and Grit Traps

- Auditing for new traps that EHRM may not have been informed about

Indoor Air Quality (IAQ) Concerns

- Proactively test for potential IAQ problems

Storm Water

- Monitor for storm water excursions during major events
- Check individual storm water pollution prevention plans to verify if sampling was done in accordance with the plan

Asbestos Containing Material (ACM)

- Manage compliance of asbestos-related activities
 - The ACM Surveys are not being updated in a timely manner
 - Records of abatements, lab analysis and other related documents are not being sent to EHRM to be placed on the shared directory
 - Audit work orders to ensure that employees are not disturbing ACM

Radiation Safety

Health Physics Operations

- Six months inventory of lasers
- Documentation and survey of large nonionizing radiation producing devices

Biological Safety

- Develop and implement Autoclave compliance and maintenance program
- Develop and implement Contaminated Sharps Injury Log program

Chemical Safety

- Review and approve protocols of chemical use in research laboratories.
- Perform industrial hygiene monitoring of hazardous chemical use

Occupational Safety

- Auditing contractors for common health and safety programs such as confined space entry, respiratory protection, lock out/tag out, and Hazard Communication
- Practice the rescue drills per the confined space entry regulations for UH employees
- Job safety analysis and ensuring that the proper safety equipment is available for the trade occupations
- Assist shops develop job-specific and equipment-specific safety training programs
- Develop and implement Lock Out / Tag Out program

Environmental Health and Risk Management Department

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