

# How Do I Know If My Environmental Health & Safety Compliance Risks are Successfully Mitigated?

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**THE UNIVERSITY of TEXAS**  
HEALTH SCIENCE CENTER AT HOUSTON

An important Lesson from the NASA Columbia Investigation (known as the Diaz Report) and its applicability to university risk management....



# Objectives

- Describe the rationale for why compliance persons need to understand what EH&S programs do
- Classify the major types of occupational risks present in modern universities
- Describe how these risks are typically managed
- Describe how program size might be assessed
- Discuss possible programmatic disconnects or difficulties and propose solutions
- Reveal data on the common safety violations issued to universities
- Reserve time for questions, answers, and discussion

# Key Definitions and Differentiations

- For this presentation, it is important to reach consensus on how certain terms will be used:
  - “**Safety**” – free from imminent harm (commonly referring to near term threats)
  - “**Health**” – status of a person’s physical condition (typically a longer term consideration)
  - “**Occupational**” – related to work
  - “**Environmental**” – impacts beyond the worksite boundary

# What Is the Need for Safety?

- In 2002, there were 4.7 million injuries and illnesses among private workplaces (5.3 cases per 100 workers)
- 5,524 fatalities (4 per 100,000 workers)
- Cost of work injuries in 2000 - \$131 billion
  - exceeds the combined profits reported by the top 13 Fortune 500 companies
- Although not as risky as some businesses, universities are sites of a variety of potential risks

# What are the Risks at Universities?

- Physical Hazards
  - Slips, trips, falls
  - Elevated work surfaces
  - Electrical equipment
- Chemical Hazards
  - Toxics
  - Ignitables
  - Corrosives
- Radiological Hazards
  - Radioactive materials
  - X-ray machines
  - Lasers
- Biological Hazards
  - Human blood
  - rDNA
  - Infectious agents

# Why an EH&S Course for Auditors?

- Desire by a variety of key university stakeholders to be provided with some level of assurance that all of these various risks are adequately controlled
- The options for providing this assurance include:
  - Wait until inspected (guaranteed to happen)
  - Conduct some sort of internal audit, even if only for compliance
  - Host an EH&S program peer review
  - Ultimately, program accreditation?

# So What Do University Health & Safety Professionals Do?

- Anticipate
- Recognize
- Evaluate
- Control environmental health and safety risks in the workplace

# How Do They Do This?

- Academic and professional preparation
- Workplace design
- Workplace surveys
- Regulatory reviews
- Worker training
- Monitoring and measurements
- Incident investigation
- Collecting and processing hazardous wastes
- Responding to emergencies
- Handling regulatory inspections
- Staying abreast of latest developments and emerging technologies

# EH&S Involves a Diversity of Issues

- Health and safety draws aspects from
  - Math
  - Physics
  - Chemistry
  - Biology
  - Law
  - Communications
  - Human behavior
  - Finance
  - “Sales”

# Four Examples

- Real world situations involving the major hazard classes at universities and the role of the health and safety professional

# 1. Physical Hazard

- The risk of structural fire represents risk to both personnel and property. What controls are considered appropriate for a particular building, especially if it is a high rise dormitory?

# 1. Physical Hazard

- To address this question, EH&S would need to determine:
  - Structure age, construction, size, and current use
  - Occupancy level
  - Current controls in place and condition
  - Current requirements (NFPA 101)
  - Comparative status to requirements – gap analysis
  - Perform a financial analysis
  - Communicate to decision makers
  - Provide consultations
  - Implement final decisions and monitor

## 2. Chemical Hazard

- The university semiconductor design lab wishes to use a newly created solvent to clean circuit boards. Can it be used safely?

## 2. Chemical Hazard

- To address this question, EH&S would need to
  - Identify the chemical to be used and determine any associated hazards
  - Determine if an exposure limit has been established, and if so, what the limit is
  - Determine how and where the chemical will be used
  - Determine the appropriate method for sampling
  - Comparative status to requirements – gap analysis
  - Perform a financial analysis
  - Communicate to decision makers
  - Provide consultations
  - Implement final decisions and monitor

### **3. Radiological hazard**

- The university health clinic wishes to install an x-ray machine to perform chest x-rays. What issues must be considered to accommodate this need?

## 3. Radiological Hazard

- To address this question, EH&S would need to
  - Identify the type of x-ray machine to be used and its associated operational parameters
  - Pursue the necessary permitting procedures
  - Determine necessary facility shielding, worker training, exposure monitoring, etc.
  - Develop a system for the routine surveillance of the operation
  - Comparative status to requirements – gap analysis
  - Perform a financial analysis
  - Communicate to decision makers
  - Provide consultations
  - Implement final decisions and monitor

## 4. Biological Hazard

- Because of some of the sensitive research being performed at your university, there have been threats made alluding to the introduction of infectious agents into the campus, namely anthrax. How might this issue be addressed?
- (note – could replace anthrax with pandemic influenza)

## 4. Biological Hazard

- To address this question, EH&S would need to
  - Become familiar with the risks associated with anthrax
  - Understand the pathways of exposure and means of protection
  - Identify the symptoms of exposure
  - Develop a worker awareness training program, inclusive of how to handle exposures
  - Comparative status to requirements – gap analysis
  - Perform a financial analysis
  - Communicate to decision makers
  - Provide consultations
  - Implement final decisions and monitor

## **5. Indoor Air Quality (wait – you said there were four examples)**

- What about when the samples says “everything is ok” but the occupants don’t agree
- A special issue that needs to be handled with aplomb
- Equal parts science and art – especially in the absence of regulatory guidance
- Experience indicates an important barometer for EH&S program reputation and success

# The \$100,000 Question: “How Many EH&S Staff Should We Have?”

- Perhaps a equally important question is: What can the college and university EH&S profession realistically hope to obtain from a benchmarking exercise involving staffing metrics?
- What level of precision can we really expect?
- At best, we can likely only achieve a reasonable estimation of “industry averages”, such as number of EH&S FTE’s for an institution exhibiting certain characteristics

# Sampling of Possible Staffing Predictors and Influencing Factors

- Quantifiable
  - Institution size
  - Number of labs
  - Age
  - Level of funding
  - Population
  - Geographic location
  - Deferred maintenance
  - Public/private
  - Medical/vet schools
  - Disjunct campus
- Non-quantifiable
  - Regulatory history
  - Level of regulatory scrutiny
  - Tolerance of risk by leadership
  - Level of administrative arrogance
  - Level of trust/faith in program
  - Ability of EH&S program to articulate needs

# Desirable Characteristics of Predictors for Benchmarking

- Consistently quantifiable
- Uniformly defined by a recognized authority
- Easily obtained
- Meaningful and relevant to decision makers (provides necessary context)
- Consider something as simple as the definition of “number of EH&S staff”

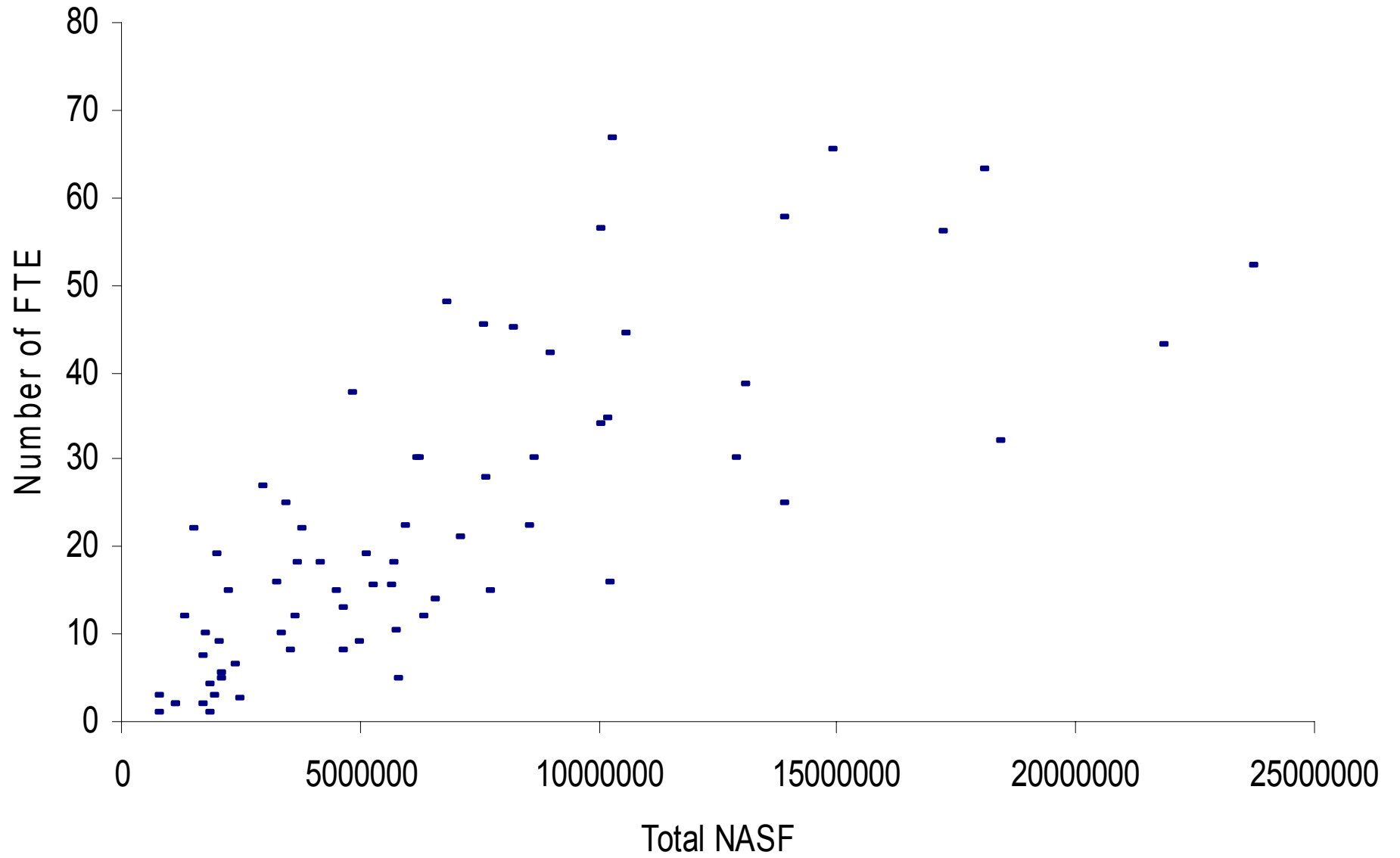
# Definition Use for Our Benchmarking Study

- “EH&S Staff”: technical, managerial, and directorial staff that support the EH&S function
  - Including administrative staff, (but it probably doesn’t make a significant difference)
- Include staff outside the EH&S unit, but must devote half time or greater to institutional safety function (0.5 FTE)
  - Example
    - Safety person in facilities
    - Student workers (>0.5 FTE)
- Include contractors only if on-site time is half time or greater (0.5 FTE)
  - Example –
    - contract lab survey techs, yes if >0.5 FTE
    - Fire detection testing contractors, likely no.

# Preliminary Results

- Findings indicated that Total NASF and Lab NASF were the most favorable (statistically significant) and pragmatic predictors
- On a two dimensional graph, we can only show 2 parameters, but the relationship between sq ft and staffing is clear....

### Number of EHS FTE vs. Total NASF



# Predictability Modeling (based on n = 69)

Total campus sq ft	Lab + non-lab sq ft	ln (total campus sq ft)	ln (lab) + ln (non lab sq ft)	Med/vet school	General "others" category	BSL3 or impending BSL4	R Squared Value
X							47.69
	X						50.46
		x					64.90
			X				71.10
			x	x			78.19
			x	x	x		78.41
			x	x		x	80.05

# Mathematical Model

**# EH&S FTE =**

$$e^{[(0.516 * \text{School}) + (0.357 * \ln(\text{Lab NASF})) + (0.398 * \ln(\text{Nonlab NASF})) + (0.371 * \text{BSL})] - 8.618}$$

R<sup>2</sup> value based on 69 observations = 80%

## Definitions for predictor variables:

**Lab NASF:** the number of lab net assignable square footage

**Nonlab NASF:** the number of non-lab net assigned square footage (usually obtained by subtracting lab from gross)

**School:** defined as whether your institution has a medical school as listed by the AAMC or a veterinary school as listed by the AAVMC; 0 means no, 1 means yes

**BSL:** this variable indicates if the institution has a BSL3 or BSL4 facility; 0 means no, 1 means yes

# Applicability?

- Although imperfect, the formula does afford an ability to get a “ballpark figure”
- Number derived does not address capabilities or productivity, only head count
- Number should be viewed within context of program efficacy and outcomes

# Observed Common Problems

- Program can't succinctly articulate what they do and how they may be aiding the mission (in fact, may not know the mission either!)
- Failure to understand how universities work and the needs of faculty
- Multiple or parallel programs, suggesting duplication of efforts – not understanding the system –(try the hiring process approach)
- Technical arrogance –absence of service attitude
- Not closely linked with risk management and insurance efforts
- Take pride in throwing flags rather than helping push towards goal line
- Multiple specialties + multiple lab visits = faculty irritation
- Inability to measure activities, outcomes, or display them
- Don't play well with others

# Partial Solution

- Interestingly, there are over 4,500 colleges and universities in the US and none the EH&S staff supporting them were trained in how to do EH&S for a university
- Within the University of Texas System, we created the “EH&S Academy” boot camp for all new EH&S staff, also open to non-UTS staff
- Provided to University of California System campuses as well
- A recent development - on site “mini Academies” for entire staff (UNC-CH, U of Louisville, Harvard)
- Course content devised to specifically address noted deficiencies – how universities work, how to measure satisfaction, and the famous “50 questions”

# Common Compliance Issues: How Safety Programs are Measured

- *Systemic*: ultimate program outcomes
  - number of injuries, illnesses, fatalities
- *Organic*: indicators of program design and implementation
  - numbers of unsafe conditions, practices, behaviors (near misses?)
  - attitudes
  - regulatory compliance

# Systemic Performance Measures

- Log and Summary of Occupational Illnesses and Injuries (OSHA 300 Log)
  - Occupational injuries, illnesses, fatalities
- But what about when rates are low or indistinguishable?

# Organic Performance Measures

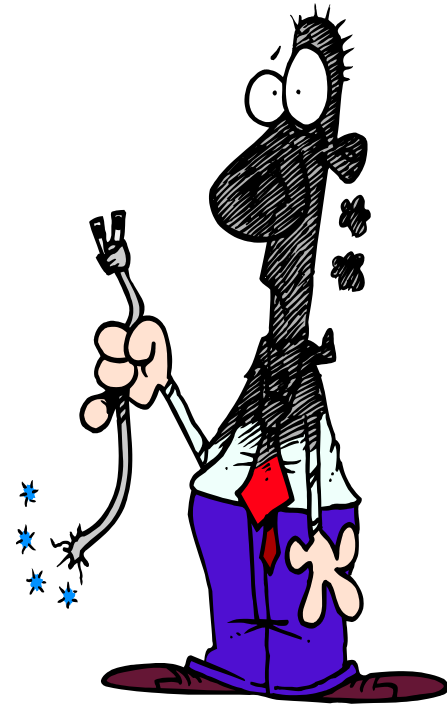
- Possible precursors or indicators of systemic outcomes: surveys, audits, inspections, citations, violations
- In the absence of systemic measures, organic measures are commonly used performance barometers
- Reviewing historical data summaries provides an opportunity for prevention
- Principle authorities: Fire Marshall, Food Sanitarians, EPA, OSHA, BRC

# Violation Outcome Analysis

- “Learn from your mistakes”

“But more importantly, learn from the mistakes of others”

Jeff Cooperzzo



# Fire Marshall Compliance Activities

- Texas Fire Marshall Methodology
  - ranked system: reported events to routine
  - limited resources impact ability to conduct many routine inspections
- Possible Biases
  - inspections essentially limited to complaints
  - standard assessment tool not routinely used
  - may only be indicative of poor programs
  - common problems based on intuition only

# Fire Marshall Compliance Activities

- 1) Failure to test and maintain alarms, lights
- 2) Failure to ensure stairwell door closure
- 3) Failure to maintain door closing devices
- 4) Doors propped open
- 5) Failure to schedule fire drills to ensure awareness
- 6) Improper storage of chemicals
- 7) Inappropriate door locking devices
- 8) Inoperable smoke detectors in living areas
- 9) Improper extension cord use
- 10) Obstructed hallways

# Food Sanitation

- Harris County Health Dept. Methodology
  - ranked system: complaints to routine
  - limited resources impact ability to conduct some routine inspections
- Possible Biases
  - standard assessment tool used but data not assembled and analyzed objectively
  - common problems based on intuition only
  - may be biased by poor programs, but solutions offered (see web page)

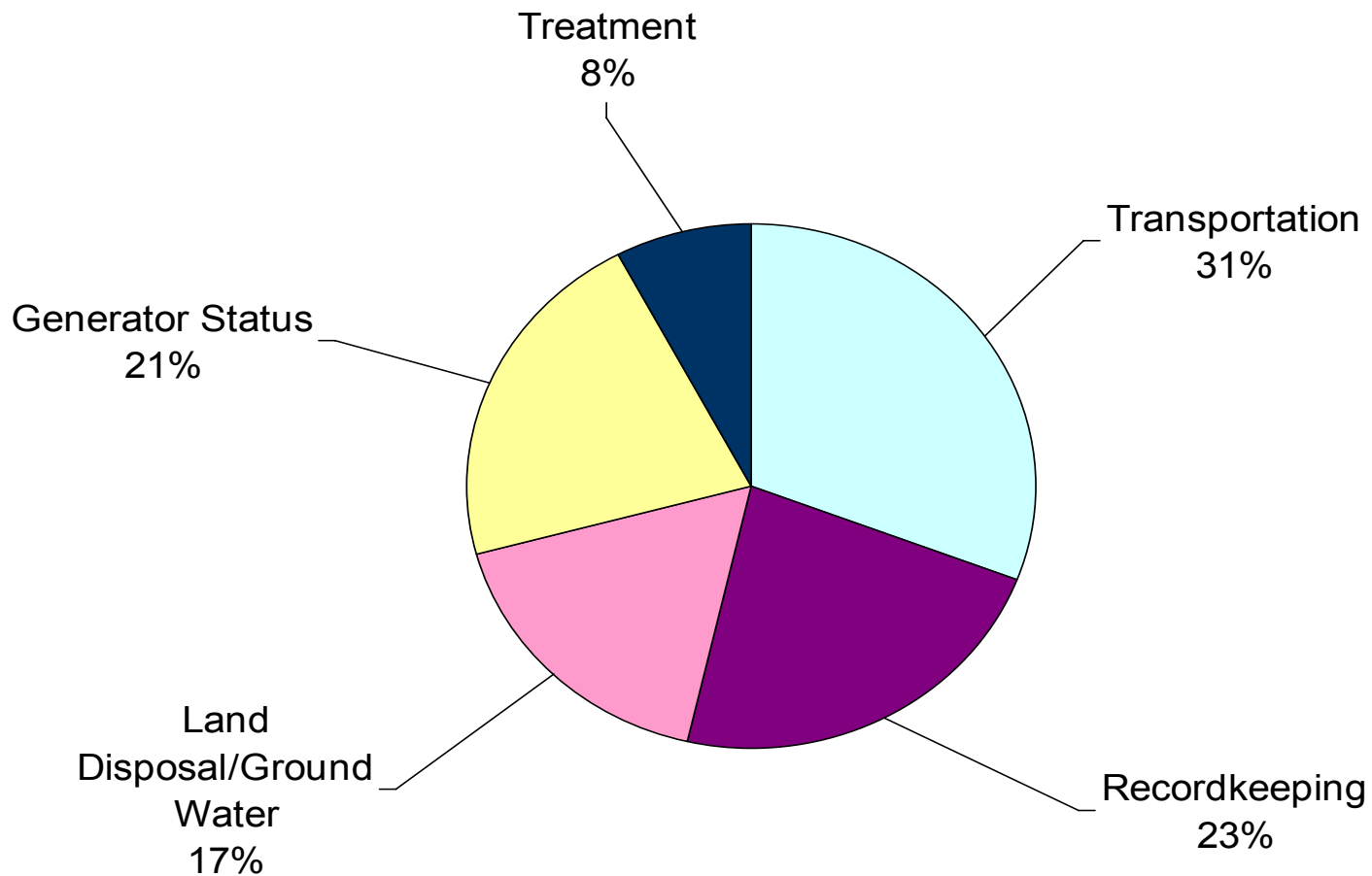
# Common Food Sanitation Violations

- 1) Food stored/displayed at wrong temperature
- 2) No hand washing/poor hygiene
- 3) Improper sanitizing rinse of utensils, dishes
- 4) Rodents, insects present
- 5) Toxic items not properly stored or labeled
- 6) Hand washing/toilet facilities inaccessible
- 7) Food improperly covered
- 8) Unsafe, inappropriate water source
- 9) Food storage temps wrong
- 10) Improper plumbing

# EPA Compliance Activities

- Methodology
  - ranked system: reported events to routine
  - limited resources impact ability to conduct many routine inspections
- Possible Biases
  - inspections essentially limited to TSD's, LQG's complaints
  - may only be indicative of poor programs

# EPA Citations Assessed to Colleges & Universities 1987-97



# OSHA Compliance Activities

- Methodology
  - ranked system: fatalities to routine
  - limited resources impact ability to conduct many routine inspections
- Possible Biases
  - SIC coding (SIC 8221)
  - public institutions not represented
  - may only be indicative of poor programs

## OSHA Top Violations (by 10 General Categories)

- Electrical 11.8%
- Toxic & Haz. Substances 5.2%
- Machine Guards 5.2%
- Means of Egress 2.4%
- Protective Equip 2.3%
- Walking Surfaces 1.7%
- First aid 1.6%
- Fire protection 1.6%
- Environ. Controls 1.4%
- Haz. Materials 0.7%
- **Total 34%**

# Radiation Safety

- Texas Department of Health-Bureau of Radiation Control
- Methodology
  - routine inspections of all permit holders, with frequency based on scope of activities
  - covers both licensees of radioactive material and registrants of radiation producing devices
- Possible Biases
  - perhaps the most unbiased database available

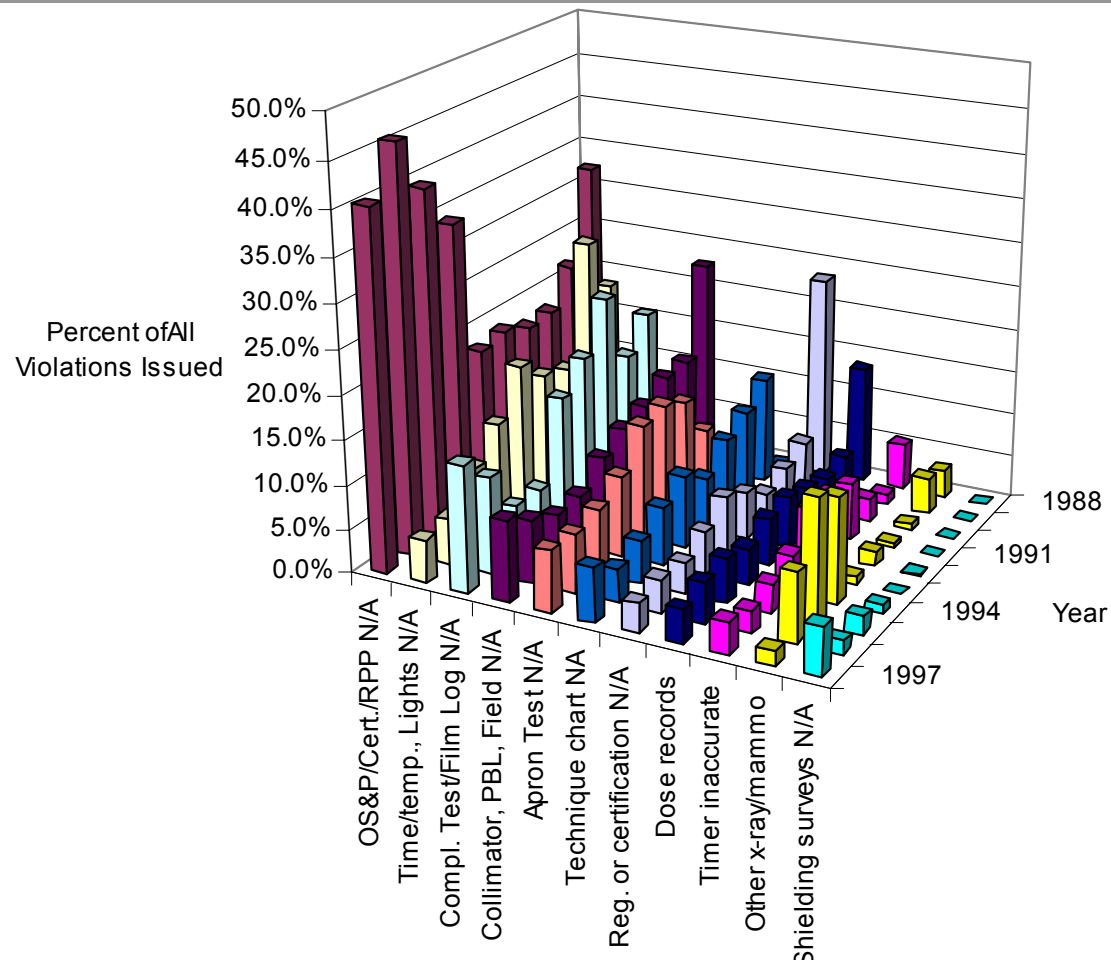
# X-ray Registrants: 1988-1997

- |                   |     |                   |    |
|-------------------|-----|-------------------|----|
| ● Procedures      | 20% | ● Technique chart | 5% |
| ● Time/temp chart | 11% | ● Reg not current | 4% |
| ● No QC           | 10% | ● Dosimetry       | 4% |
| ● Alignment       | 7%  | ● Timer           | 3% |
| ● Annual PE tests | 6%  | ● "Other x-ray"   | 3% |

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**Total†** **73%**

# Registrants: Top Ten Violations By Year 1988-1997



# So What Does All This Mean?

- EH&S programs cannot focus only on these common violations to the exclusion of everything else, but...
  - a myriad of regulations exist, but the bulk of non-compliance issues are few
  - and are often not rocket science and are easy to avoid
  - data summaries are reflective of inspector bias – but that's ok!
  - when in compliance – everyone wins!

# Summary

- Universities are sites of a variety of potential EH&S risks
- The dynamic aspects of research necessitate a focus on “best practices” to address near term and longer term risks
- Stakeholders are demanding a level of assurance that EH&S programs are sufficiently managing the risks
- Program understanding of basic university operations is often lacking – training and education is the key
- A set of common violations issued to universities is identifiable and can, for the most part, be easily addressed



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# FY06 SHERM Metrics Summary



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Loss, Compliance, Financial, and Client Satisfaction indicators  
of the UTHSC-H

Safety, Health, Environment & Risk Management (**SHERM**) program's performance

# Objectives

- Provide a metrics-based overview of SHERM operations in FY06 by describing aspects of four key areas:

## Losses

Personnel  
Property

## Compliance

With external agencies  
With internal assessments

## Financial

Expenditures  
Revenues

## Client Satisfaction

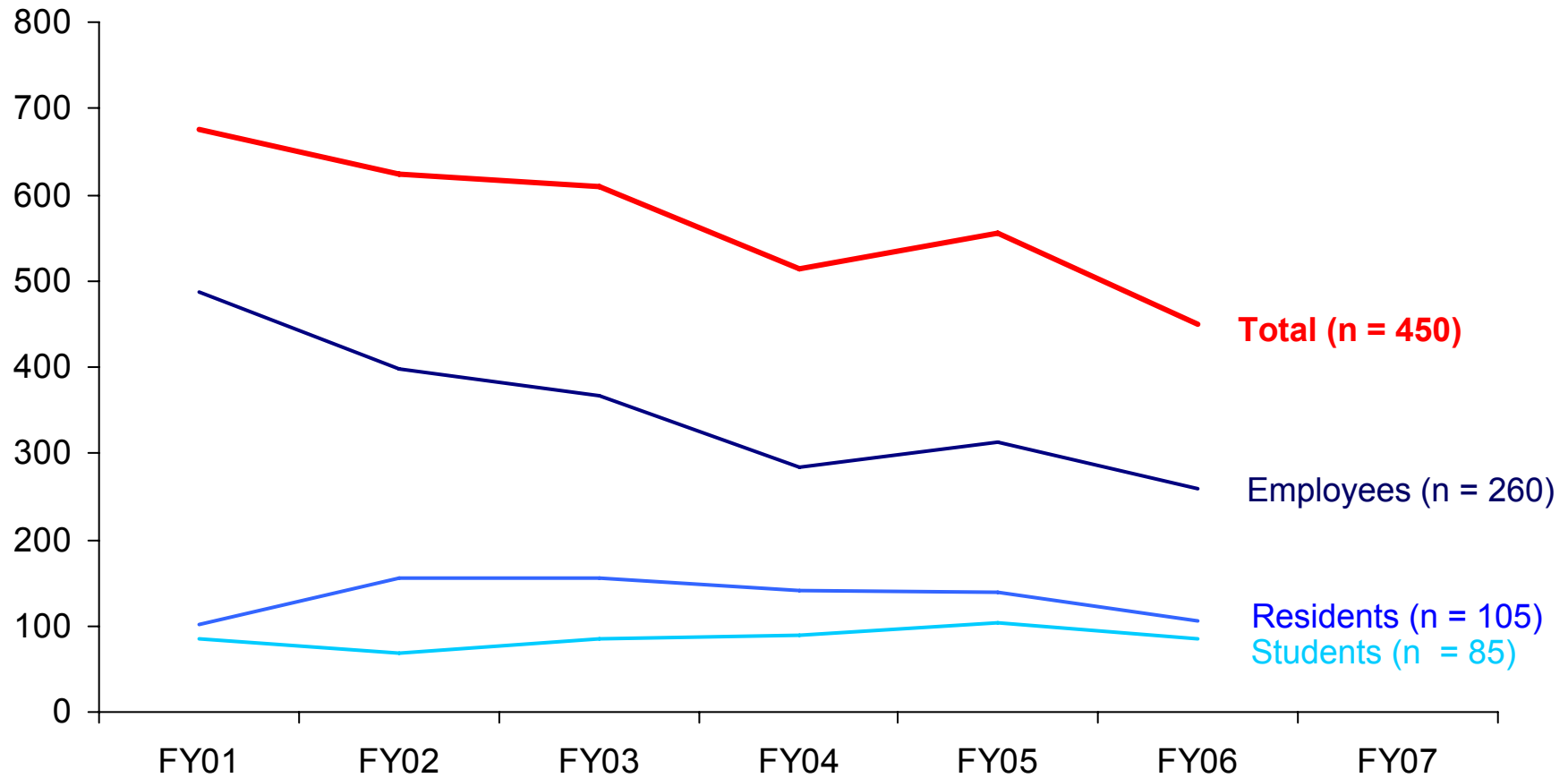
External clients served  
Internal department staff

# Losses

- **Personnel**
  - Reported injuries by employees, residents, students
- **Property**
  - Reported losses or damage to buildings, equipment

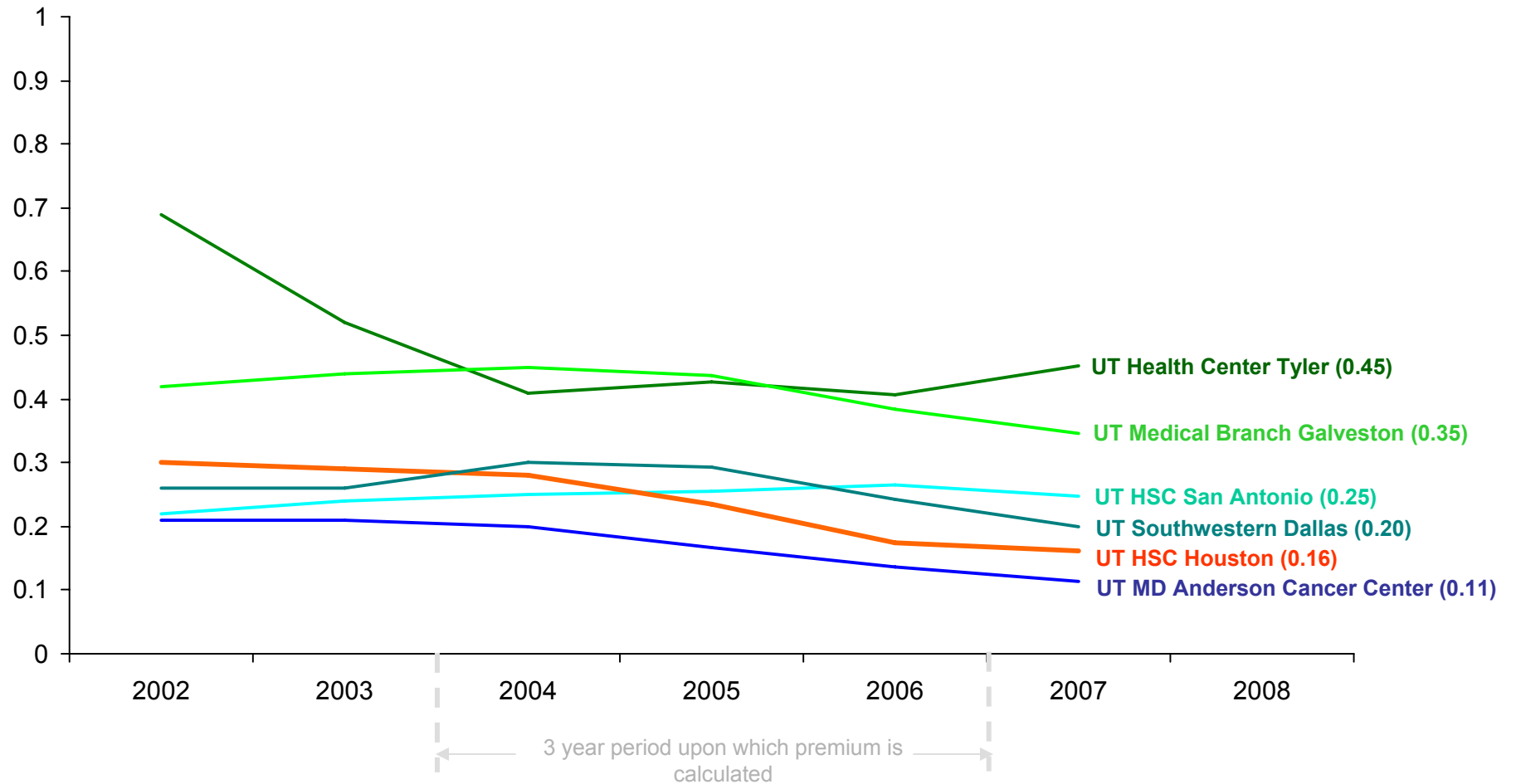
# Number of UTHSC-H First Reports of Injury, by Population Type

(total population 8,832; employee population 4,425; student population 3,587; resident population 820)

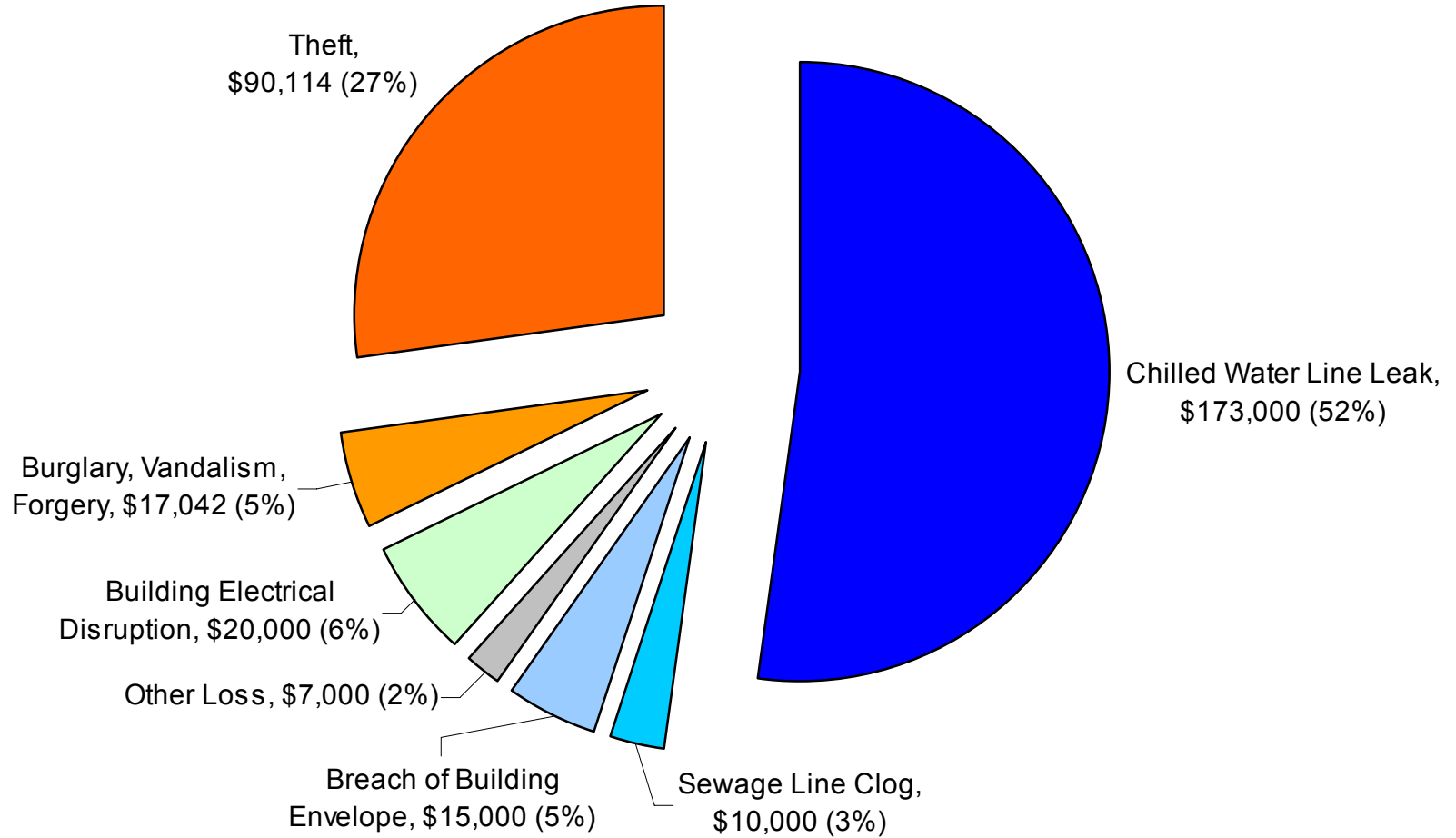


## Worker's Compensation Insurance Premium Adjustment for UTS Health Components Fiscal Years 2002 to 2007

(discount premium rating as compared to a baseline of 1, three year rolling average adjusts rates for subsequent year)



**UTHSC-H Retained Property Loss Summary for FY06**  
(Total FY06 losses by cause and amount in dollars, Total Loss~\$328,000)



# FY07 Actions - Losses

- **Personnel**

- Continue with aggressive EH&S safety surveillance of workplaces and nurse case management activities for injured employees
- Targeted focus on high risk reported injury areas – HCPC, resident needlestick prevention

- **Property**

- Educate faculty and staff about perils causing losses (water, theft) and possible simple interventions
- Facilitate instillation of surge capacity for ultra cold freezer space
- Explore means of freezer alarm monitoring
- Continue development of property fire protection program

# Compliance

- With external agencies
  - Regulatory inspections, peer reviews
- With internal assessments
  - Results of EH&S routine safety surveillance activities

# External Agencies

- FY06
  - August 30, 2005 TX Dept of State Health Services Radiation Control
    - no items of non-compliance
  - December 2005 FM Global property protection inspection
    - Several recommendations relating to property protection: roof composition, electrical preventative maintenance, and sprinkler additions.
      - working with FPE on plans to address
  - January 10, 2006 State Fire Marshal's Office
    - Follow up inspection of 2003 MSB inspection
    - 7 of 9 original deficiencies satisfactorily addressed – primarily corridor clearance
    - 2 remaining are understandably not yet resolved, but mitigation plans in place
      - Complete building sprinkler coverage, MSB to be completed in FY07
      - Automatic door closures on all lab doors – education and awareness plan in place, long term upgrades being discussed with FPE

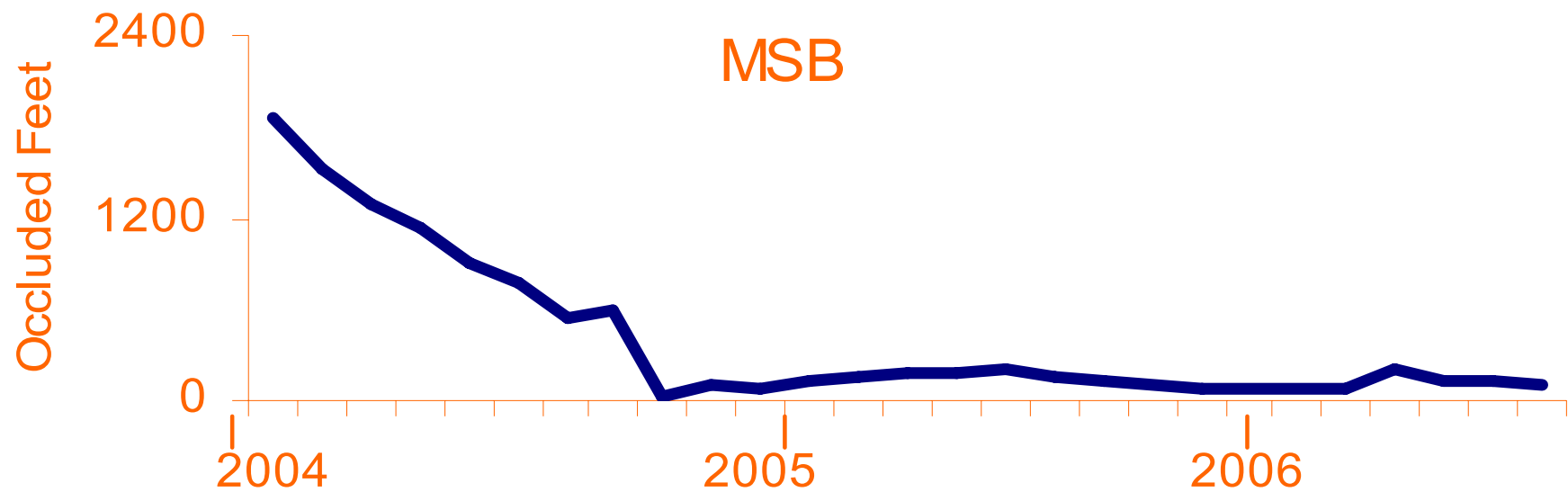
# External Agencies

- FY06 (continued)
  - April 12, 2005 FM Global equipment protection inspection
    - Several recommendations relating electrical preventative maintenance and chilled water lines
      - Working with FPE to address
  - June 6-8, 2006 UT System EH&S Peer Review
    - Findings generally positive –all recommendations addressed
      - Dedicated manager hired for Risk Management unit
      - Fiber optic upgrades to UTPD central dispatch for fire alarm monitoring
      - ADA responsibilities assigned to FPE
      - CYF long term “decay in storage” program continually evaluated
  - June 12, 2006 TX Dept of State Health Services Radiation Control
    - no items of non-compliance

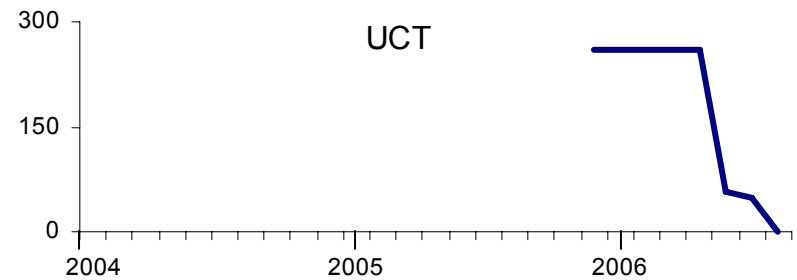
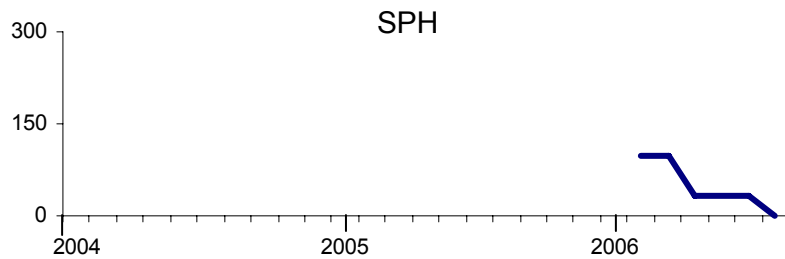
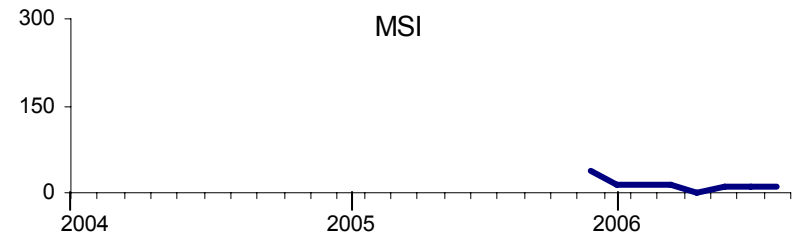
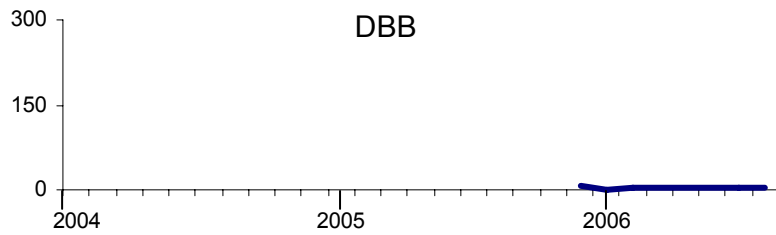
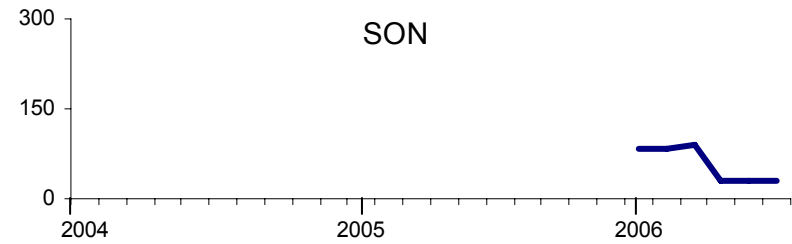
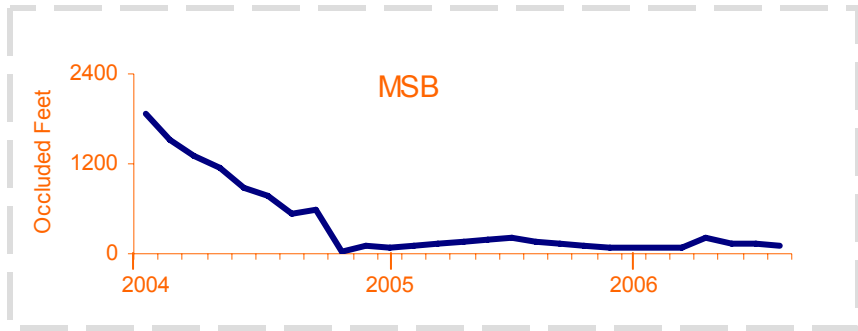
# Internal Assessments

- FY06
  - 3,062 workplace inspections documented
    - 791 deficiencies identified
      - 298 deficiencies corrected to date
      - 493 deficiencies subject to follow up correction – primarily materials stacked too high in lab areas, possibly obstructing sprinkler discharge (underlying contributing cause is lack of lab space)
  - 2,832 individuals provided with required EH&S related training
  - Continued focus on hallway clearance, leveraging on MSB success

# Occluded Feet in MSB from Jan 2004 to Aug 2006



# Occluded Feet per Building from Jan 2004 to Aug 2006



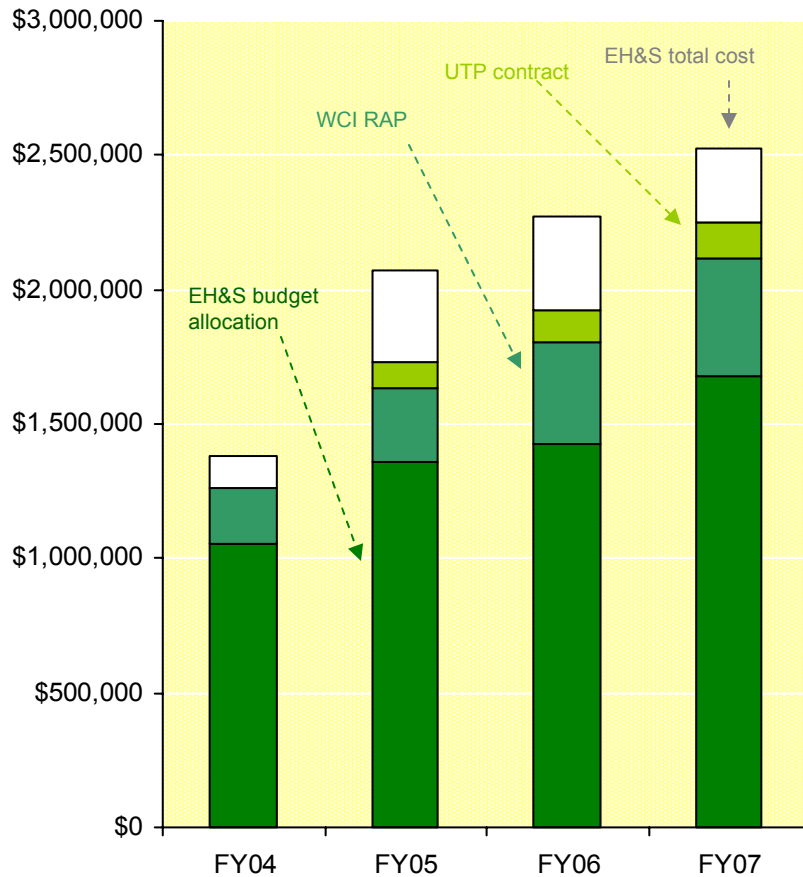
# FY07 Actions - Compliance

- **External compliance**
  - Continue to work with FPE to systematically address building issues identified by property insurance carriers
  - EH&S continue aggressive routine surveillance program to provide services to community and correct possible issues to prevent non-compliance
- **Internal compliance**
  - Continue routine surveillance program
  - Maintain successes achieved with institution-wide corridor clearance program
  - Create targeted interventions on persistently identified issues in labs to assist in ultimate resolution

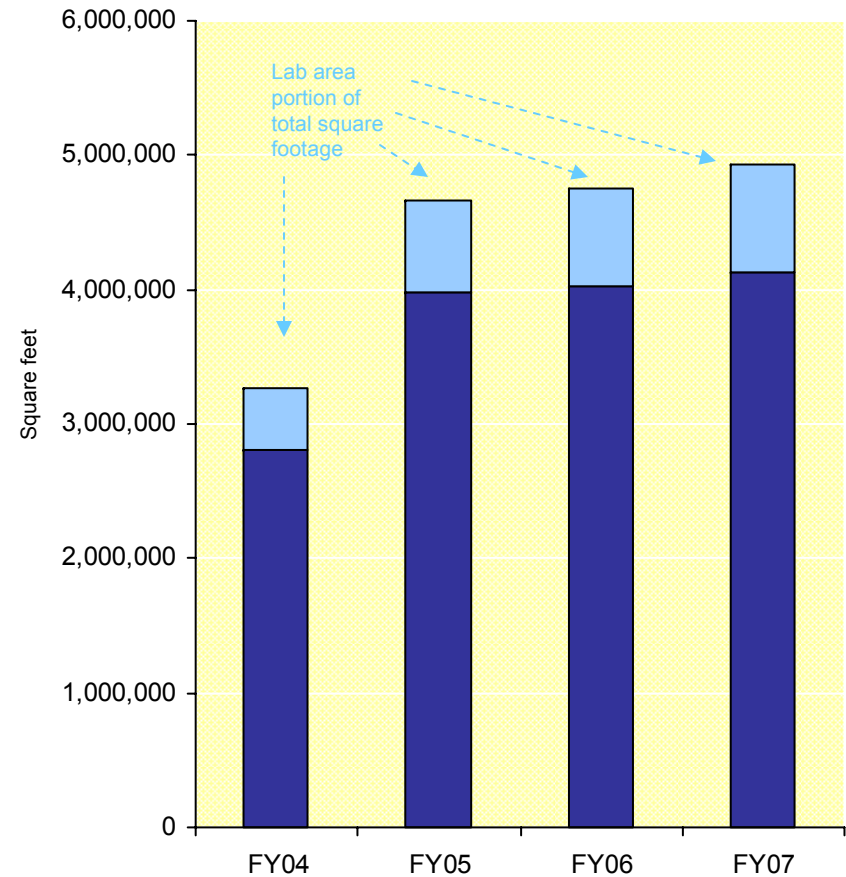
# Financial

- Expenditures
  - Program cost, cost drivers
- Revenues
  - Sources of revenue, amounts

# EH&S Resources and Campus Square Footage

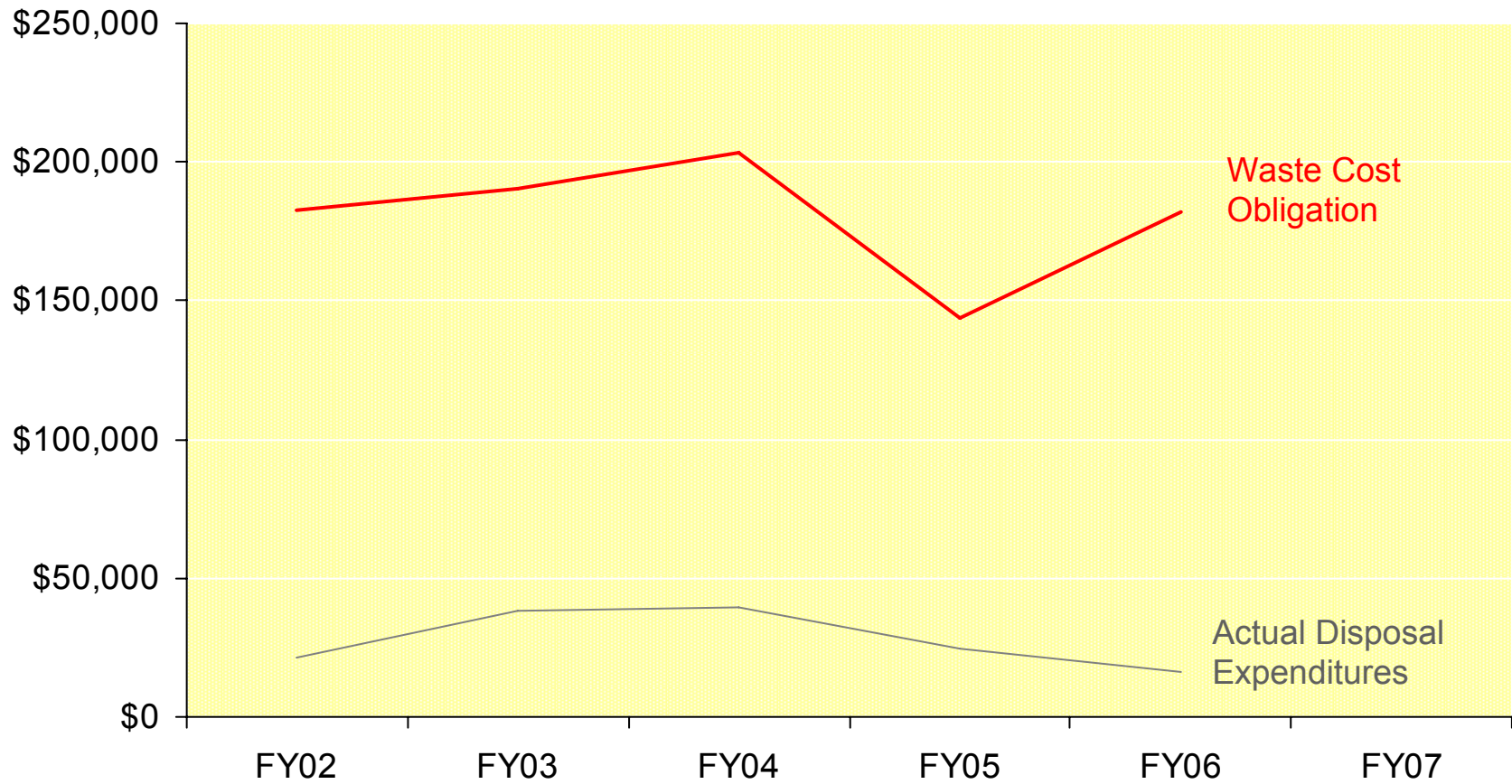


Resource Allocation By Year



Campus Square Footage By Year

## Total Hazardous Waste Cost Obligation and Actual Disposal Expenditures (inclusive of chemical, biological, and radioactive waste streams)



# FY06 Revenues

• Continuing education course revenues	
– UT SPH SWCOEH	\$7,000
– Misc. honoraria	\$2,500
• Service contracts	
– UTP	\$130,000
– Shell Equilon	\$ 3,000
– University of Houston	\$ 1,000
– Southern Methodist University	\$ 2,500
– Cornell University	\$ 6,000
– Cyclotope	\$ 500
– Other (ERM)	\$ 1,000
<b>Total</b>	<b>\$153,500</b>

# FY07 Actions - Financial

- **Expenditures**

- Continue with aggressive hazardous waste minimization program to contain costs
- Continue with development of cross functional staff, affording more cost effective services to institution
- Focus on property loss prevention efforts to reduce the cost of institutional losses
- Work with FPE on proposal for creation of “retained loss fund” to aid in the prompt recovery from uninsured losses

- **Revenues**

- Continue with service contract and community outreach activities that provide financial support to operate institutional program (FY06 revenues equated to about 10% of operating budget)
- Explore granting opportunities to provide support for emergency preparedness and business continuity efforts (example: FEMA Disaster Resistant University initiative)

# Client Satisfaction

- External clients served
  - Results of targeted client satisfaction survey
- Internal department staff
  - Summary of professional development activities

# Client Satisfaction

- Focused assessment of a designated aspect performed annually:
  - FY03 – Focus on Radiation Safety Program
  - FY04 – Focus on client expectations of safety programs and fulfillment of expectations
  - FY05 – Focus on Chemical Safety Program
  - FY06 – Focus on **Administrative Support Staff**

# Administrative Staff Targeted Surveys Results Summary

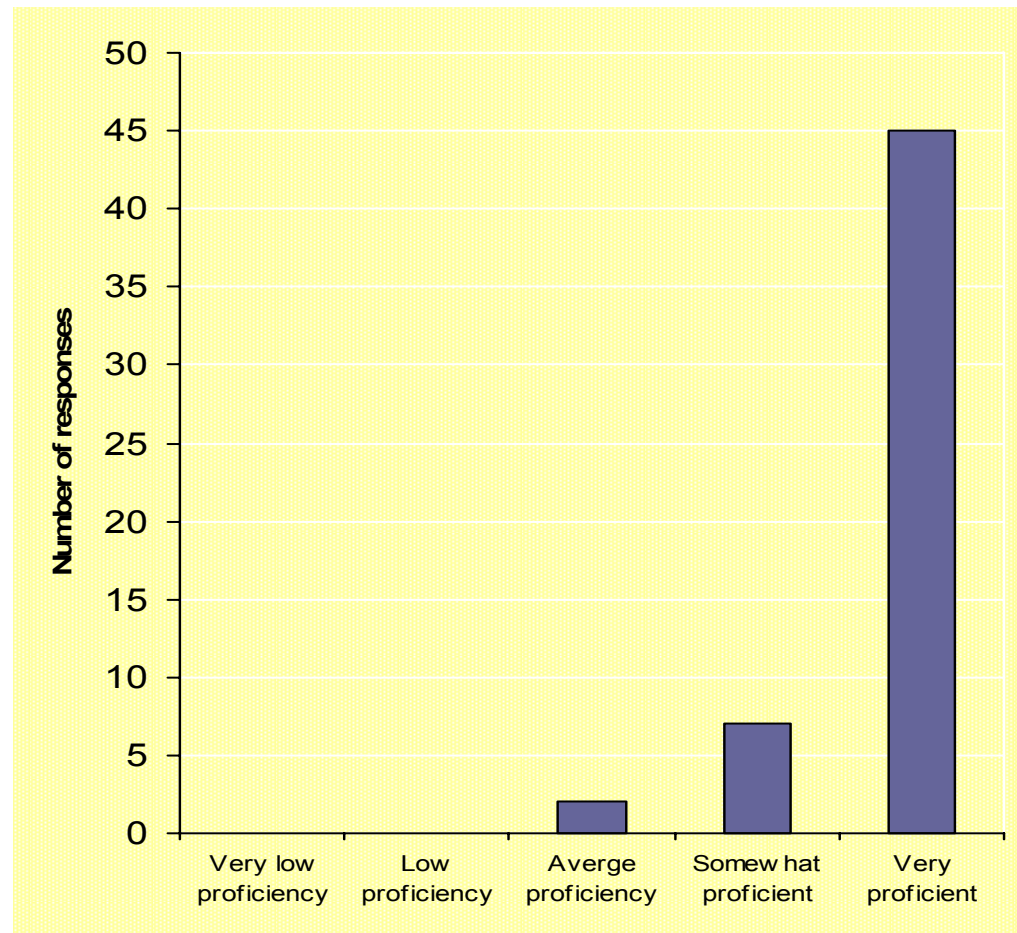
distributed to 90 targeted faculty and staff clients across UTHSCH, with 54 responses in 30 days  
(60% response rate)

Question	Response		
	Yes	No	N/A
Phone answered within 3 rings	78%	2%	20%
Timely response to inquiry?	93%	2%	8%
Courteous response?	94%	3%	3%
If couldn't answer, offered viable alternatives?	66%	2%	34%

# Administrative Staff Client Satisfaction Survey Results

(distributed to 90 targeted faculty, staff and student clients across UTHSCH, with 54 responses in 30 days (60% response rate))

*“Compared to other administrative personnel you interact with across UTHSC-H, please indicate your impression of the level of proficiency of the EH&S Administrative Support Staff member demonstrates during your interactions with them”*



# Selected Written Comments

(n = 24)

- *“...EH&S administrative staff is very efficient and helpful. I find them to be the most responsive administrative component that I deal with on a regular basis at UTHSC-H.”*
- *“...The EH&S program is designed to be user friendly and because of this philosophy, the program is very well received by the faculty and staff...”*



# Internal Department Staff Satisfaction

- Continued support of ongoing academic pursuits
- Weekly continuing education sessions on a variety of topics
- Participation in teaching in continuing education course offerings
- Membership, participation in professional organizations

## Example: Weekly Continuing Education Topics

- Displaying metrics effectively
- Nanotechnology
- Pandemic flu
- Environmental Management Systems
- Updated TB guidelines
- Updated WCI regulations
- Lab survey process review
- Business continuity planning
- Controlled substance disposal
- Stem cells
- HIPAA compliance
- Space inventory process by FPE
- NFPA 45 fire safety for labs
- UV light safety

# FY07 Actions – Client Satisfaction

- **External clients**
  - Continue with “customer service” approach to services
  - Conduct satisfaction survey with individuals involved with actual injury events (reporting and subsequent follow up services) and/or business continuity “informed risk” efforts
- **Internal Clients (departmental staff)**
  - Continue with professional development seminars
  - Continue with involvement in training courses and outreach activities
  - Continue mentoring sessions on academic activities
  - Conduct 360° evaluations on supervisors to garner feedback from staff

# Metrics Caveats

- What isn't effectively captured by these metrics?
  - Increasing **complexity of research protocols**
  - Increased **collaborations** and associated challenges
  - Increased **complexity of regulatory environment**
  - Impacts of **construction** – both navigation and reviews
  - The **pain, suffering, apprehension** associated with any injury – every dot on the graph is a person
  - The things that didn't happen
  - Overall **comfort/satisfaction** with the department and the work environment

# Summary

- Various metrics indicate that SHERM is fulfilling its mission of maintaining a **safe and healthy** working and learning **environment** in a **cost effective** manner that **doesn't interfere with operations**:
  - Injury rates are at the lowest rate in the history of the institution
  - Despite growth in the research enterprise, hazardous waste costs aggressively contained
  - Client satisfaction is measurably high
- **Nano scale work** will be area of significant **growth** in the near term future and will necessitate concurrent support
- Likewise, **Fire & Life Safety & Emergency Response** will also be an area of **growth** driven by new construction
- A successful safety program is largely people powered – the **services most valued cannot be automated!**
- Resource needs are **driven primarily by campus square footage** (lab and non-lab)

**INSTITUTIONAL COMPLIANCE RISK MITIGATION PLAN FY06-07  
ENVIRONMENTAL HEALTH & SAFETY**

<b>RISK: Environmental release of a potentially hazardous agent or infliction of some type of environmental damage caused by non-compliance with HOOP 18.10 Hazardous Chemical, Infectious, and Radioactive Waste</b>		<b>Rank: HH</b>
<b>Risk Mitigation Plan</b>		
<b>MONITORING PLAN</b>	<b>Please describe the policies and procedures used to control this risk and the supervision and oversight that are provided to ensure compliance with the policies and procedures.</b>	
<p><b>Operating Controls</b> What activities are embedded in day-to-day operations that serve to minimize or control this risk? Examples:</p> <ul style="list-style-type: none"> <li>▪ Policies and procedures</li> <li>▪ Segregation of Duties</li> <li>▪ Reconciliations or Comparisons</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Health and Safety (EH&amp;S) program in place within Biological Safety Program.</li> <li>• Program documents, including institutional policies, manuals and procedures in place.</li> <li>• Risk based training provided to workers and students.</li> <li>• Compliance with safety requirements included as part of performance reviews.</li> <li>• Open reporting and assistance request mechanisms in place and working.</li> </ul>	
<p><b>Supervisory Controls</b> What type of supervisory review is conducted on the operating controls? Generally, this type of review is:</p> <ul style="list-style-type: none"> <li>▪ performed very soon after the generation of the event/transaction</li> <li>▪ Performed by line management or staff positions who do not originate the event/transaction</li> <li>▪ Performed on a sample of the total number of events/transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Independent workplace safety surveys conducted by EH&amp;S.</li> <li>• Tracking mechanism for items of non-compliance noted and tracked.</li> <li>• Results of workplace safety surveys provided to lab principle investigator or other responsible party.</li> </ul> <p><b>Documentary Evidence</b></p> <ul style="list-style-type: none"> <li>• Documentation of workplace safety surveys</li> <li>• Summary results and exception reports to institutional safety committees</li> </ul>	
<p><b>Oversight Controls</b> What type of oversight review does the DRP conduct on the supervisory controls? Generally, this type of review is:</p> <ul style="list-style-type: none"> <li>▪ Performed within a short period (weeks/months) after the event/transaction is originated</li> <li>▪ Examples: Exception reports, status reports, analytical reviews, variance analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Summary results and exception reports provided to appropriate institutional safety committees and Safety Council</li> <li>• Routine summary of activities provided to Executive Leadership</li> <li>• Annual program reviews conducted</li> </ul> <p><b>Documentary Evidence</b></p> <ul style="list-style-type: none"> <li>• Committee meeting minutes</li> <li>• EH&amp;S activity reports</li> <li>• Workplace surveillance reports</li> <li>• Incident reports</li> </ul>	

**INSTITUTIONAL COMPLIANCE RISK MITIGATION PLAN FY06-07  
ENVIRONMENTAL HEALTH & SAFETY**

<b>RISK: Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with Texas Department of Insurance (28 TAC) - State Fire Marshal</b>		<b>Rank: HH</b>
<b>Risk Mitigation Plan</b>		
<b>MONITORING PLAN</b>	<b>Please describe the policies and procedures used to control this risk and the supervision and oversight that are provided to ensure compliance with the policies and procedures.</b>	
<p><b>Operating Controls</b> What activities are embedded in day-to-day operations that serve to minimize or control this risk? Examples:</p> <ul style="list-style-type: none"> <li>▪ Policies and procedures</li> <li>▪ Segregation of Duties</li> <li>▪ Reconciliations or Comparisons</li> </ul>	<ul style="list-style-type: none"> <li>▪ Environmental Health and Safety (EH&amp;S) Fire and Life Safety &amp; Emergency Preparedness program in place.</li> <li>▪ Program documents, including manuals and procedures created.</li> <li>▪ Risk based training being provided to building occupants.</li> <li>▪ Compliance with safety requirements included as part of performance reviews.</li> <li>▪ Open reporting and assistance request mechanisms in place and working.</li> </ul>	
<p><b>Supervisory Controls</b> What type of supervisory review is conducted on the operating controls? Generally, this type of review is:</p> <ul style="list-style-type: none"> <li>▪ performed very soon after the generation of the event/transaction</li> <li>▪ Performed by line management or staff positions who do not originate the event/transaction</li> <li>▪ Performed on a sample of the total number of events/transactions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Independent workplace safety surveys and drills conducted by EH&amp;S.</li> <li>▪ Tracking mechanism for items of non-compliance to be noted and tracked.</li> <li>▪ Results of safety surveys being provided to responsible party.</li> </ul> <p><b>Documentary Evidence</b></p> <ul style="list-style-type: none"> <li>▪ Documentation of workplace safety surveys</li> <li>▪ Summary results and exception reports to institutional safety committees</li> </ul>	
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**INSTITUTIONAL COMPLIANCE RISK MITIGATION PLAN FY06-07  
ENVIRONMENTAL HEALTH & SAFETY**

<b>RISK: Unauthorized access, use, or removal of potentially hazardous agents caused by non-compliance with HOOP 18.11 Safe Use of Biological Agents</b>		<b>Rank: HH</b>
<b>Risk Mitigation Plan</b>		
<b>MONITORING PLAN</b>	<b>Please describe the policies and procedures used to control this risk and the supervision and oversight that are provided to ensure compliance with the policies and procedures.</b>	
<p><b>Operating Controls</b> What activities are embedded in day-to-day operations that serve to minimize or control this risk? Examples:</p> <ul style="list-style-type: none"> <li>▪ Policies and procedures</li> <li>▪ Segregation of Duties</li> <li>▪ Reconciliations or Comparisons</li> </ul>	<ul style="list-style-type: none"> <li>▪ Environmental Health and Safety (EH&amp;S) program in place within Biological Safety Program.</li> <li>▪ Program documents, including institutional policies, manuals and procedures in place.</li> <li>▪ Risk based training provided to workers and students.</li> <li>▪ Compliance with safety requirements included as part of performance reviews.</li> <li>▪ Open reporting and assistance request mechanisms in place and working.</li> </ul>	
<p><b>Supervisory Controls</b> What type of supervisory review is conducted on the operating controls? Generally, this type of review is:</p> <ul style="list-style-type: none"> <li>▪ performed very soon after the generation of the event/transaction</li> <li>▪ Performed by line management or staff positions who do not originate the event/transaction</li> <li>▪ Performed on a sample of the total number of events/transactions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Independent workplace safety surveys conducted by EH&amp;S.</li> <li>▪ Tracking mechanism for items of non-compliance noted and tracked.</li> <li>▪ Results of workplace safety surveys provided to lab principle investigator or other responsible party.</li> </ul> <p><b>Documentary Evidence</b></p> <ul style="list-style-type: none"> <li>▪ Documentation of workplace safety surveys</li> <li>▪ Summary results and exception reports to institutional safety committees</li> </ul>	
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**INSTITUTIONAL COMPLIANCE RISK MITIGATION PLAN FY06-07  
ENVIRONMENTAL HEALTH & SAFETY**

<b>RISK: Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with National Fire Protection Association(NFPA 1600) – Disaster/Emergency Management</b>		<b>Rank: HM</b>
<b>Risk Mitigation Plan</b>		
<b>MONITORING PLAN</b>	<b>Please describe the policies and procedures used to control this risk and the supervision and oversight that are provided to ensure compliance with the policies and procedures.</b>	
<p><b>Operating Controls</b> What activities are embedded in day-to-day operations that serve to minimize or control this risk? Examples:</p> <ul style="list-style-type: none"> <li>▪ Policies and procedures</li> <li>▪ Segregation of Duties</li> <li>▪ Reconciliations or Comparisons</li> </ul>	<ul style="list-style-type: none"> <li>▪ Environmental Health and Safety (EH&amp;S) Fire and Life Safety &amp; Emergency Preparedness program in place.</li> <li>▪ Program documents, including manuals and procedures created.</li> <li>▪ Risk based training being provided to building occupants.</li> <li>▪ Compliance with safety requirements included as part of performance reviews.</li> <li>▪ Open reporting and assistance request mechanisms in place and working.</li> </ul>	
<p><b>Supervisory Controls</b> What type of supervisory review is conducted on the operating controls? Generally, this type of review is:</p> <ul style="list-style-type: none"> <li>▪ performed very soon after the generation of the event/transaction</li> <li>▪ Performed by line management or staff positions who do not originate the event/transaction</li> <li>▪ Performed on a sample of the total number of events/transactions</li> </ul>	<ul style="list-style-type: none"> <li>▪ Independent workplace safety surveys and drills conducted by EH&amp;S.</li> <li>▪ Tracking mechanism for items of non-compliance to be noted and tracked.</li> <li>▪ Results of safety surveys being provided to responsible party.</li> </ul> <p><b>Documentary Evidence</b></p> <ul style="list-style-type: none"> <li>▪ Documentation of workplace safety surveys</li> <li>▪ Summary results and exception reports to institutional safety committees</li> </ul>	
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Institutional Compliance Quarterly Report  
November 1, 2006 to January 31, 2007

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from November 1, 2006 to January 31, 2007.

<b>RISK: Environmental release of a potentially hazardous agent or infliction of environmental damage caused by non-compliance with HOOP 18.10</b>	
<b>Monitoring Activities</b>	<b>Answer</b>
Were workplace safety surveys conducted by EH&S this quarter that monitored hazardous chemical waste?	
Were workplace safety surveys conducted by EH&S this quarter that monitored hazardous infectious waste?	
Were workplace safety surveys conducted by EH&S this quarter that monitored radioactive waste?	
Were summary results and exception reports provided to institutional safety committees and lab principal investigators?	
Were any annual program reviews specific to waste conducted this quarter?	
<b>Training Activities</b>	<b>Answer</b>
Did new employees who work with hazardous chemicals or infectious and radioactive waste hired this quarter receive training?	
Did surveys conducted this quarter include the review of whether employees who work with hazardous chemicals or infectious and radioactive waste received the required training?	
<b>Reporting Activities</b>	<b>Answer</b>
Was a summary of the above activities provided to the appropriate safety committee?	
Were any items of significant non-compliance noted in workplace surveys this quarter? If yes, please describe and provide the corrective action taken in the space provided at the end of this report.	
<b>Corrective Action:</b>	



Institutional Compliance Quarterly Report  
November 1, 2006 to January 31, 2007

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from November 1, 2006 to January 31, 2007.

<b>Risk: Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with Texas Department of Insurance (28 TAC) - State Fire Marshal</b>	
<b>Risk: Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with National Fire Protection Association (NFPA 1600) – Disaster/Emergency Management</b>	
<b>Monitoring Activities</b>	<b>Answer</b>
Were fire drills conducted by EH&S this quarter?	
<b>Training Activities</b>	<b>Answer</b>
Were any trainings conducted relative to this risk? If yes, please describe the training and the number of employees who participated in the training in the space provided at the end of this report.	
<b>Reporting Activities</b>	<b>Answer</b>
Were summary results and exception reports provided to the Safety Council?	
Were any items of significant non-compliance noted in safety surveys this quarter? If yes, please describe and provide the corrective action taken in the space provided at the end of this report.	
<b>Corrective Action, if any:</b>	
<b>Description of Training Activities, if any:</b>	



Institutional Compliance Quarterly Report  
November 1, 2006 to January 31, 2007

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from November 1, 2006 to January 31, 2007.

<b>Risk: Unauthorized access, use, or removal of potentially hazardous agents caused by non-compliance with HOOP 18.11</b>	
<b>Monitoring Activities</b>	<b>Answer</b>
Were workplace safety surveys conducted by EH&S this quarter that monitored safe use of biological agents?	
Were any annual program reviews conducted this quarter relative to this risk?	
<b>Training Activities</b>	<b>Answer</b>
Did new employees who work with biological agents hired this quarter receive training?	
Did surveys conducted this quarter include the review of whether employees who work with biological agents received the required training ?	
<b>Reporting Activities</b>	<b>Answer</b>
Were summary results and exception reports provided to the appropriate safety committee?	
Were any items of significant non-compliance noted in any safety survey conducted this quarter? If yes, please describe and provide the corrective action taken in the space provided at the end of this report.	
<b>Corrective Action:</b>	



Institutional Compliance Verification Checklist  
Risk Area: EHS

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from **December 1, 2006 to December 31, 2006**. Please attach all documents requested below to the checklist and return to the Office of Institutional Compliance (UCT 1470).

<b>Risk: Environmental release of a potentially hazardous agent or infliction of environmental damage caused by non-compliance with HOOP 18.10: Hazardous Chemical, Infectious, and Radioactive Waste</b>	
<b>Requested Documents</b>	<b>Available</b>
1. Copy of the Survey Schedule for the month of December, 2006.	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Documentary evidence of any annual program reviews relative to this risk, if any, that were conducted during the month of December, 2006.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
3. Documentation showing individuals who have taken the Basic Hazard Communication training and Basic Radiation Training during December 2006, including class rosters and on-line training reports	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Monthly Activity Summary reports for FY07 through December, 2006.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>If any of the above documentation is not available, please provide an explanation for each missing document here.</b>	



Institutional Compliance Verification Checklist  
Activity: EHS

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from **December 1, 2006 to December 31, 2006**. Please attach all documents requested below to the checklist and return to the Office of Institutional Compliance (UCT 1470).

<b>Requested Documents</b>		<b>Available</b>
<b><u>Risk:</u> Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with Texas Department of Insurance (28 TAC) - State Fire Marshal</b>		
<b><u>Risk:</u> Worker, student, or visitor injury and death due to a facility or work process issue caused by non-compliance with National Fire Protection Association (NFPA 1600) – Disaster/Emergency Management</b>		
1.	Documentary evidence of fire drills conducted by EH&S during December, 2006, at the Medical School and CYF buildings	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2.	Documentary evidence verifying that summary results and exception reports were provided to the institutional safety committees during December, 2006, if any	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
3.	Documentary evidence of any annual program reviews, if any, that were conducted relative to this risk during the month of December, 2006	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
4.	Documentary evidence of training conducted relative to this risk during December 2006, if any	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A



Institutional Compliance Verification Checklist  
Activity: EHS

Instructions: Please provide the following information about the monitoring, training and reporting activities conducted for FY07 from **December 1, 2006 to December 31, 2006**. Please attach all documents requested below to the checklist and return to the Office of Institutional Compliance (UCT 1470).

<b>Risk: Unauthorized access, use, or removal of potentially hazardous agents caused by non-compliance with HOOP 18.11 Safe Use of Biological Agents</b>	
<b>Requested Documents</b>	<b>Available</b>
1. Documentary evidence of any annual program reviews relative to this risk, if any, that were conducted during the month of December, 2006	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. Documentary evidence of any annual program reviews that were conducted relative to this risk during the month of December, 2006	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
3. Documentary evidence of Lab & Clinic Safety, including Bloodborne Pathogen, training during December 2006, including class rosters and on-line training reports	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Documentary evidence of annual Bloodborne Pathogen Refresher training during December 2006, including class rosters and on-line training reports	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. Documentary evidence of Shipping Inf. Substances & Diagnostic Specimens training during December 2006, including class rosters and on-line training reports	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. Documentary evidence of any other training conducted relative to this risk during December, 2006, including class rosters and on-line training reports	<input type="checkbox"/> Yes <input type="checkbox"/> No