# CONTENTS

Executive Summary...................................................................................................................................... 1

Introduction................................................................................................................................................... 3
  Background............................................................................................................................................... 3
  Purpose...................................................................................................................................................... 5
  Scope and Methodology............................................................................................................................ 6

## OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

General Environment.................................................................................................................................... 7
  Governance ............................................................................................................................................... 7
Injury and Illness Prevention Program...................................................................................................... 9
Hazard Communication Program............................................................................................................... 10
Inspections.............................................................................................................................................. 12

Hazardous Materials Administration ........................................................................................................ 15
  Regulatory Reports and Filings............................................................................................................... 15
  Changes in Hazardous Materials Inventory ............................................................................................ 16

Laboratory Standard.................................................................................................................................... 17

Hazardous Waste ........................................................................................................................................ 18

Training....................................................................................................................................................... 20
APPENDICES

APPENDIX A: Personnel Contacted
APPENDIX B: Campus Response
APPENDIX C: Chancellor’s Acceptance

ABBREVIATIONS

CalOSHA California Office of Safety and Health Administration
CCR California Code of Regulation
CHO Chemical Hygiene Officer
CHP Chemical Hygiene Plan
COSE College of Science and Engineering
CSU California State University
CUPA Certified Unified Program Agency
EHS Environmental Health and Safety
EO Executive Order
EPA Environmental Protection Agency
HAZCOMM Hazard Communication Program
HAZMAT Hazardous Materials
HMBP Hazardous Materials Business Plan
HMM Hazardous Materials Management
HSC California Health and Safety Code
IIPP Injury and Illness Prevention Program
LCA College of Liberal and Creative Arts
MSDS Material Data Safety Sheets
OHS Occupational Health and Safety
OUA Office of the University Auditor
RCRA Federal Resource Conservation and Recovery Act
SOP Standard Operating Procedures
SFSU San Francisco State University
EXECUTIVE SUMMARY

As a result of a systemwide risk assessment conducted by the Office of the University Auditor (OUA) during the last quarter of 2012, the Board of Trustees, at its January 2013 meeting, directed that Hazardous Materials Management (HMM) be reviewed. The OUA had previously reviewed HMM in 2000, and Occupational Health and Safety in 2007.

We visited the San Francisco State University campus from April 8, 2013, through May 10, 2013, and audited the procedures in effect at that time.

In our opinion, due to the effect of the weaknesses described below, the fiscal, operational, and administrative controls for HMM as of May 10, 2013, taken as a whole, were not sufficient to meet the objectives stated in the “Purpose” section of this report. Areas of major concern include: general environment, hazardous materials administration, laboratory standard, and hazardous waste and training.

As a result of changing conditions and the degree of compliance with procedures, the effectiveness of controls changes over time. Specific limitations that may hinder the effectiveness of an otherwise adequate system of controls include, but are not limited to, resource constraints, faulty judgments, unintentional errors, circumvention by collusion, and management overrides. Establishing controls that would prevent all these limitations would not be cost-effective; moreover, an audit may not always detect these limitations.

The following summary provides management with an overview of conditions requiring attention. Areas of review not mentioned in this section were found to be satisfactory. Numbers in brackets [ ] refer to page numbers in the report.

GENERAL ENVIRONMENT [7]

Governance over HMM needed improvement. Specifically, the campus Environmental Health and Safety (EHS) department did not have written policies and procedures addressing campuswide and department-specific responsibilities for hazardous materials (HAZMAT) and hazardous waste handling, and other departmental policies and plans were incomplete or conflicted with each other. In addition, the roles and responsibilities of the injury and illness prevention program (IIPP) safety coordinators, the main liaisons between EHS and campus colleges and departments, were not clearly defined. Also, the campus IIPP was not updated in a timely manner and included outdated information, a department-specific IIPP had not been developed for the procurement department, and the IIPP for the College of Liberal and Creative Arts art departments was not made readily available to affected employees. Further, campus hazard communication programs (HAZCOMM) needed improvement. For example, the campus and some individual department HAZCOMM programs were outdated, and as a result, HAZCOMM regulations were not always being followed. In addition, administration of HMM inspections needed improvement. Specifically, campus IIPP safety inspection policies related to HMM were unclear, did not always assign responsibility for the performance of inspections, and did not ensure that inspections were being properly conducted. Moreover, safety equipment was not always inspected in accordance with campus and regulatory requirements.
HAZARDOUS MATERIALS ADMINISTRATION [15]

Certain regulatory reports filed by the campus contained outdated and inaccurate information. Also, administration of the campuswide HAZMAT inventory needed improvement. Specifically, the campus did not have updated procedures for creating and maintaining an inventory that included HAZMAT on campus, and it did not have complete policies and procedures for reporting HAZMAT inventory changes that occurred due to purchases, gifts, donations, or private accumulations.

LABORATORY STANDARD [17]

The College of Science and Engineering (COSE) did not have current, comprehensive chemical hygiene plans outlining the safety processes for employees working in labs.

HAZARDOUS WASTE [18]

Administration of hazardous waste storage and disposal needed improvement. Specifically, a campus storage room contained waste that had been stored beyond the approved accumulation time frame and was mislabeled. In addition, COSE did not have policies and procedures that included monitoring and enforcement activities to ensure that faculty and principal investigators were held accountable for properly removing hazardous waste from their labs when they completed their work on campus.

TRAINING [20]

The campus did not consistently provide initial and refresher training to all employees with responsibility for HAZMAT and hazardous waste handling.
INTRODUCTION

BACKGROUND

Regulation over hazardous waste has its roots in the 1976 Federal Resource Conservation and Recovery Act (RCRA), which was enacted to address growing public concern regarding health risks, waste generation, and waste disposal surrounding hazardous materials (HAZMAT). RCRA initiated the “cradle to grave” tracking and management of hazardous waste, and its regulations addressed, but were not limited to, generation of hazardous waste; hazardous waste treatment, transportation, storage, and disposal; federal and state reporting; federal, state, and local permits and registration; and waste minimization.

RCRA states that the federal government can authorize states to develop, implement, and enforce their own HAZMAT and waste management regulations, with the stipulation that the state programs must be as stringent or broader in scope than the federal regulations. In 1992, the Environmental Protection Agency (EPA) granted California authority to develop its own regulations, most of which are now codified in the Health and Safety Code and in Titles 8 and 22 of the California Code of Regulations (CCR). The California Department of Toxic Substances Control is responsible for enforcing these codes and administrative laws.

All California State University (CSU) campuses purchase HAZMAT for both instructional and research purposes, most prominently in colleges that focus on the sciences, fine arts, and liberal arts. In addition, campus maintenance departments such as custodial services, facilities, and auto shops use materials that are known to have properties that are harmful to humans and the environment and must be monitored to ensure proper and safe utilization. Nearly all of the areas that utilize HAZMAT generate hazardous waste that is subject to strict regulation for safe and proper storage, transport, and disposal.

Sections of Title 8 of the CCR address hazardous materials management (HMM) in several areas, including training, communication, storage, and safety. However, in response to a number of serious accidents in university laboratories in recent years, there has been an increased diligence from the California Occupational Safety and Health Administration (CalOSHA) and other regulatory agencies in enforcing regulations and standards related to laboratory safety. The Occupational Exposure to Hazardous Chemicals in Laboratories standard (8 CCR 5191), commonly referred to as the Laboratory Standard, was created specifically for non-production laboratories and outlines specific requirements for employers to ensure the safety of employees in these labs. The standard requires that the employer designate a chemical hygiene officer and have a written chemical hygiene plan (CHP), which must be routinely verified for effectiveness. The CHP must include provisions for worker training, chemical exposure monitoring where appropriate, medical consultation when exposure occurs, criteria for the use of personal protective equipment and engineering controls, and special precautions for particularly hazardous substances. The CHP must be tailored to reflect the specific chemical hazards present in the laboratory where it is to be used.

Executive Order (EO) 1039, California State University – Occupational Health and Safety Policy, dated January 1, 2009, recognizes that occupational health and safety or environmental health and safety departments are an integral to the CSU system and that injuries and/or illnesses may arise from work-related activities that include exposure to potentially harmful substances. It outlines the responsibilities of the various parties, including the systemwide Office of Risk Management, campus presidents, campus
environmental health and safety departments, and campus departments. It requires campuses to develop, implement, and maintain a campus health and safety program to address all identified campus hazards, including hazardous materials.

EO 1069, *Risk Management and Public Safety*, dated March 1, 2012, delegates authority and responsibility for systemwide administrative oversight and programmatic responsibility for risk management, environmental health and safety, emergency preparedness, business continuity, and public safety to the assistant vice chancellor for risk management and public safety. This includes responsibility for policies and programs, resource documents, training programs, and production of guidance on the application of risk management techniques and systemwide policies and procedures.

In 2000, the Office of the University Auditor conducted an audit of HMM at nine campuses and issued a systemwide report. The report noted issues related to contractual arrangements and insurance coverage for waste transporters, material safety data sheets (MSDS), and staff HAZMAT orientation and refresher training. Previous to the 2000 review, OUA audited HMM in 1992, with a follow-up review in 1996. The OUA also audited Occupational Health and Safety in 2007 and reviewed activities that also involved HMM.
PURPOSE

Our overall audit objective was to ascertain the effectiveness of existing policies and procedures related to HMM activities and to determine the adequacy of controls that ensure compliance with relevant governmental regulations, Trustee policy, Office of the Chancellor directives, and campus procedures.

Within the audit objective, specific goals included determining whether:

- Administration of HMM is well-defined and includes clear lines of organizational authority and responsibility.
- Risks related to HMM have been identified and assessed, and the results are applied to appropriate plans and processes.
- Policies and procedures pursuant to HMM are current and comprehensive, and distribution procedures are effective.
- Appropriate due diligence and oversight controls are in place to ensure that contractors conducting HMM services meet both regulatory and CSU contractual obligations.
- The campus has established the required HAZMAT communication documents.
- The campus has obtained the required registrations and permits and complies with key regulatory reporting requirements.
- Hazardous materials inventories are maintained, and purchasing and receipt processing is conducted in a controlled environment.
- HAZMAT in containers are properly labeled to communicate contents and hazards to users.
- The campus has established effective emergency and contingency plans for HAZMAT spills and exposures.
- Campus laboratories are operating and lab activities are conducted in accordance with 8 CCR 5191, *The Occupational Exposure to Hazardous Chemicals in Laboratories* standard, commonly referred to as the Laboratory Standard.
- Adequate procedures exist to identify hazardous waste.
- Hazardous waste, including biomedical and universal waste, is properly stored and labeled and does not accumulate on-site for longer than the allowable time.
- Hazardous waste transportation and disposal processes are in compliance with regulations.
- Employees and students who handle HAZMAT and/or generate hazardous waste have been adequately trained.
SCOPE AND METHODOLOGY

The proposed scope of the audit as presented in Attachment A, Audit Agenda Item 2 of the January 22 and 23, 2013, meeting of the Committee on Audit stated that Hazardous Materials Management would include, but was not limited to, a review of the systems and procedures for controlling the purchase, generation, storage, use, and disposal of HAZMAT and wastes; employee training; emergency response plans; reporting requirements; and compliance with federal and state regulations.

Our study and evaluation were conducted in accordance with the International Standards for the Professional Practice of Internal Auditing, issued by the Institute of Internal Auditors, and included the audit tests we considered necessary in determining that accounting and administrative controls are in place and operative. This review emphasized, but was not limited to, compliance with state and federal laws, Board of Trustee policies, and Office of the Chancellor policies, letters, and directives. The audit focused on procedures in effect from July 1, 2011, through May 10, 2013.

We focused primarily upon the internal administrative, compliance, and operational controls over HMM activities. Specifically, we reviewed and tested:

- Campus administration of HMM, including clear reporting lines and defined responsibilities and current policies and procedures for HAZMAT handling and waste disposal.
- Compliance with permit and registration requirements, as well as with required regulatory and CSU reporting requirements.
- Contents of HAZMAT safety plans, such as the CHP and Hazard Communication plan, as required by the CCR and CalOSHA.
- Hazard communication practices, including the accessibility of MSDS, appropriate hazard signage, and proper labeling of containers stored on site.
- Hazardous waste determination, storage, transportation, and disposal practices.
- Training for employees and students on HAZMAT handling and hazardous waste disposal.
OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

GENERAL ENVIRONMENT

GOVERNANCE

Governance over hazardous materials management (HMM) needed improvement. We reviewed the organizational structure and supporting documentation related to governance of HMM, and we found that:

- The campus Environmental Health and Safety (EHS) department did not have current written policies and procedures addressing campuswide and department-specific responsibilities for hazardous materials (HAZMAT) and hazardous waste handling.

- Departmental policies, plans, and other documents providing guidance for critical processes related to HMM, including training and inspections, were incomplete and sometimes conflicted with each other.

- The roles and responsibilities of the injury and illness prevention program (IIPP) safety coordinators, the main liaisons between EHS and campus colleges and departments, were not clearly defined. Also, procedures did not ensure that safety coordinators were assigned to each area and trained in their responsibilities, nor that safety information was regularly communicated to them for distribution to their assigned colleges and departments.

- The College of Science and Engineering (COSE) safety committees had not been established in all college departments, and methods to communicate workplace safety issues were not always evident in other campus areas that handled HAZMAT.

Executive Order (EO) 1039, California State University Occupational Health and Safety Policy, dated January 1, 2009, states that the California State University (CSU), its officers, and its employees are responsible for ensuring that activities and tasks are performed in a manner that reasonably controls hazards that can cause injuries or illnesses. It further states that occupational health and safety is recognized as an integral function throughout the CSU system.

State Administrative Manual §20050 states that the elements of a satisfactory system of internal accounting and administrative controls shall include an established system of practices to be followed in performance of duties and a system of authorization and recordkeeping procedures adequate to provide effective accounting control.

Government Codes §13402 and §13403 state that management is responsible for establishing and maintaining a system of internal administrative controls, which includes documenting the system, communicating system requirements to employees, and assuring that the system is functioning as prescribed and is modified, as appropriate, for changes in conditions. It further states that administrative controls are the methods through which reasonable assurance can be given that
measures adopted by state agency heads to safeguard assets and promote operational efficiency are being followed.

The San Francisco State University (SFSU) Injury and Illness Prevention Program, dated October 2009, states that department safety coordinators serve as the liaison between EHS and other campus departments on matters pertaining to inspections, incident/injury investigations, and personnel safety and training. The IIPP also states that campus departments must devise a system for communicating workplace safety issues to its employees and recommends the development of department safety committees to achieve this objective.

The executive director of risk management stated that although the campus has made important changes and hires in EHS over the past year and continues to do so, frequent changes at the management level in EHS over the prior four years and subsequent turnover in staff contributed to a backlog in updating campus safety policies and procedures, including updates to the IIPP and efforts to define the structure of the safety coordinator model for campus safety communication.

Inadequate definition of roles and responsibilities for HMM increases the risk of misunderstandings related to the performance of duties and functions, inconsistencies in complying with CSU requirements, and an increased likelihood of related accidents and injuries.

**Recommendation 1**

We recommend that the campus:

a. Update written policies and procedures for EHS to include campuswide and department-specific responsibilities for HAZMAT and hazardous waste handling.

b. Update departmental policies, plans, and other documents providing guidance for critical processes related to HMM, including training and inspections, to ensure that they are complete and do not conflict with each other.

c. Clearly define the roles and responsibilities of IIPP safety coordinators, and develop procedures to ensure that safety coordinators are assigned to each area and are trained in their responsibilities, and that safety information is regularly communicated to them for distribution to their assigned colleges and departments.

d. Establish COSE safety committees in all college departments, and develop methods to communicate workplace safety issues in other campus areas that handle HAZMAT.

**Campus Response**

In response to the recommendation, the campus will:

a. Update written EHS policies to include campuswide and department-specific responsibilities for HAZMAT.
b. Update departmental policies and plans for critical processes related to HMM, including training and inspections.

c. Clearly define IIPP roles and responsibilities, including staff training, and ensure information is regularly communicated through the campus safety committee.

d. Establish COSE safety committees and develop methods to communicate workplace safety issues in other areas that handle HAZMAT.

Expected completion date: February 2014

INJURY AND ILLNESS PREVENTION PROGRAM

Campus IIPPs needed improvement.

Specifically, we found that:

- The campuswide IIPP was last updated in October 2009 and included outdated information. This is a repeat finding from the prior Occupational Health and Safety (OHS) audit.

- A department-specific IIPP had not been developed for the procurement department, and the IIPP for the College of Liberal and Creative Arts (LCA) art departments was not made readily available to affected employees.

Title 8 §3203 states that every employer shall establish, implement, and maintain an effective IIPP, which shall, at a minimum, identify the person or persons with authority and responsibility for implementing the program; include a system for ensuring employee compliance with safe and healthy work practices; include a system for communicating with employees on matters relating to occupational safety and health and procedures for identifying and evaluating workplace hazards, including scheduled periodic inspections to identify unsafe conditions and work practices.

EO 1039, California State University OHS Policy, dated January 1, 2009, states that the CSU, its officers, and its employees are responsible for ensuring that activities and tasks are performed in a manner that reasonably controls hazards that can cause injuries or illnesses. It further states that the campus EHS program administrators are responsible for developing and maintaining an IIPP that meets the regulatory requirements.

The SFSU IIPP, dated October 2009, states that each department at SFSU is required to have its own written IIPP, and that the department head or chairperson is the person with the responsibility and authority for implementing the program.

The executive director of risk management stated that management turnover in EHS contributed to the delay in addressing updates to the campus IIPP and in communication to campus departments regarding the requirement for individual plans.
Lack of a current and specific IIPP increases the risk of accidents and injuries and exposes the university to potential litigation and regulatory sanctions.

**Recommendation 2**

We recommend that the campus:

a. Review and update the campuswide IIPP.

b. Develop and implement a department-specific IIPP for the procurement department, and make the IIPP for the LCA art departments readily available to affected employees.

**Campus Response**

a. The campus will review and update its IIPP.

b. The campus will develop and implement a department-specific IIPP for the procurement department, and the LCA art department will make its IIPP readily available to its employees.

Expected completion date: February 2014

**HAZARD COMMUNICATION PROGRAM**

Campus hazard communication programs (HAZCOMM) needed improvement.

Specifically, we found that:

- The campus HAZCOMM program was outdated.

- The COSE HAZCOMM program was outdated, and a provision requiring each department within COSE to formulate a department-specific HAZCOMM program was not being met or monitored. As a result, HAZMAT regulations were not always being followed. For example, during our inspections of ten COSE laboratories/storage rooms containing HAZMAT, we found that:

  - Labeling and containment of HAZMAT was inadequate in four storage rooms. For example, some receptacles did not indicate the hazards of the substances they contained, and some receptacles had residue on the outside.

  - One lab had stored incompatible substances together in a fume hood.

  - Of the ten principal investigators who oversee the labs, only one responded to a request for a detailed inventory of the HAZMAT within their labs.

- LCA and the procurement department did not have written HAZCOMM programs for departments handling HAZMAT. As a result, HAZMAT regulations were not always being
followed. During our inspections of three LCA shops containing HAZMAT and the procurement department’s shipping and receiving area, we found that:

- Material Safety Data Sheets (MSDS) were not available onsite for known HAZMAT shipments received regularly in the shipping and receiving area.

- One LCA shop stored HAZMAT in secondary containers without proper labeling.

- Late-day shipments of HAZMAT were left in the open receiving warehouse overnight, rather than being stored in the separate room on the premises that contained a fireproof locker and was marked “flammable materials” for this purpose.

Title 8 §5194(e)(1) states that employers shall develop, implement, and maintain at the workplace a written HAZCOMM program for their employees. It states that the program will include a list of hazardous substances known to be present in the workplace, the methods the employer will use to inform the employees of the hazards of non-routine tasks, and the hazards associated with substances contained in unlabeled pipes in their work areas. It further states that the written program will describe the proper use of labels for HAZMAT and the location of MSDS, and that the written HAZCOMM program shall be available to employees upon request.

The SFSU HAZCOMM states that the primary responsibility for implementing and assuring compliance with the HAZCOMM is with the individual supervisors.

Title 8 §5164 states that incompatible substances shall be separated from each other in storage by distance, or by partitions, dikes, berms, secondary containment, or otherwise, so as to preclude accidental contact between them. It further states that containers of hazardous substances shall not be stored in locations or in a manner that would result in physical damage to the container, and that containers shall not be stored where they are exposed to heat sufficient to rupture the containers or to cause leakage.

The director of EHS stated that significant previous management and staff turnover in EHS and insufficient resources contributed to a delay in updating the HAZCOMM program to reflect recent changes to the HAZCOMM standards. The executive director of operations for COSE stated that resource constraints and competing priorities for the attention of the health and safety specialist in the college contributed to the lack of monitoring of the college and individual department programs. The associate dean of LCA stated that a recent reorganization in the college contributed to confusion of responsibilities for the HAZCOMM program. The director of procurement stated that he was unaware of the requirement for an individual HAZCOMM plan for the procurement department’s shipping and receiving area.

Inadequate administration of HAZCOMM programs undermines the safety of employees and students in contact with HAZMAT and increases the risk of litigation and regulatory sanctions.
Recommendation 3

We recommend that the campus:

a. Review and update the campus HAZCOMM program.

b. Review and update the COSE HAZCOMM program, instruct each department within COSE to develop and implement a department-specific HAZCOMM program, and perform periodic inspections to ensure compliance with all program provisions.

c. Develop and implement written HAZCOMM programs for LCA and the procurement department, and perform periodic inspections to ensure compliance with all program provisions.

Campus Response

a. The campus will review and update its HAZCOMM program.

b. COSE will review and update department-specific HAZCOMM programs and perform inspections to ensure compliance with all program provisions.

c. LCA and the procurement department will develop and implement a HAZCOMM program and perform periodic inspections.

Expected completion date: February 2014

INSPECTIONS

Administration of HMM inspections needed improvement.

We found that:

- Campus IIPP safety inspection policies related to HMM were unclear, did not always assign responsibility for the performance of inspections, and did not ensure that inspections were being properly conducted. For example:
  - The campuswide IIPP indicated that EHS would conduct inspections at least annually, but it did not address specific inspection responsibilities.
  - Facilities Services Enterprises (FSE) and LCA stated that they were not conducting HAZMAT inspections in their areas.
- IIPP safety inspections related to HMM at COSE were not always conducted in accordance with campus and regulatory requirements, and corrective action of inspection findings was not adequately monitored. For example:
  - Required health and safety specialist inspections of laboratories were not conducted in 2011.
• COSE could not provide evidence that inspections had been conducted for seven of the 13 laboratories we reviewed.

• COSE did not have a process to monitor corrective action for violations noted during inspections. For example, at least one of the violations noted in the 2012 inspections still existed during our inspection of the same laboratory.

• Instructional laboratory supervisors and principal investigators were not reminded to conduct the required quarterly lab inspections for the third quarter of 2012.

• In eight of the 13 laboratories we reviewed, the responsible lab supervisor had not completed and turned in a lab inspection to the safety coordinator for at least one quarter in 2012. Four of those eight lab supervisors had not turned in any inspections in 2012.

Safety equipment was not always inspected in accordance with campus and regulatory requirements. For example:

• A majority of the fire extinguishers we inspected had tags indicating that more than a year had passed since the last inspection had been conducted.

• Of the 13 emergency eyewash and shower facilities we reviewed, seven had not been inspected on a monthly basis.

EO 1039, *California State University Occupational Health and Safety Policy*, dated January 1, 2009, states that campuses shall develop procedures for identifying and evaluating workplace hazards, including scheduled and unscheduled inspections.

Title 8 §3203(a) states that every employer shall establish, implement, and maintain an effective IIPP that shall provide procedures for identifying and evaluating workplace hazards, including scheduled periodic inspections to identify unsafe conditions and work practices. It further states that the IIPP will include records of scheduled and periodic inspections to identify unsafe conditions and work practices, including person(s) conducting the inspection, the unsafe conditions and work practices that have been identified, and action taken to correct the conditions.

SFSU IIPP, dated October 2009, states that each department at SFSU is required to have its own written IIPP, and that the department head or chairperson is the person with the responsibility and authority for implementing the program.

SFSU IIPP, dated October 2009, states that EHS will conduct safety inspections annually and further determine if any inspections are required more frequently. The IIPP further states that any hazardous conditions revealed during an inspection shall be brought to the attention of the area supervisor or safety coordinator for abatement and resolution.

COSE CHP, dated August 2003, states that the COSE health and safety specialist shall conduct inspections each semester, and that a quarterly inspection of rooms with hazardous materials is required to be conducted by instructional lab supervisors and principal investigators.
Title 8 §5162(e) states that eyewash and shower equipment shall be activated at least monthly to flush the line and to verify proper operation.

Title 8 §6151(e)(3) states that portable fire extinguishers shall be subjected to an annual maintenance check to ensure that they are fully charged and operable.

Title 8 §5191(e)(3)(c) states that all protective equipment shall function properly and that specific measures shall be taken to ensure proper and adequate performance of such equipment.

The director of EHS stated that previous management and staff turnover in EHS and insufficient resources contributed to the delay in updating safety policies and programs, including those that reflect inspection responsibilities for EHS staff and the colleges and departments handling HAZMAT and waste. The senior director of FSE and the associate dean of LCA both stated that they were unaware of the requirement to develop a departmental IIPP and conduct the related inspections. The executive director of operations for COSE stated that resource constraints and competing priorities contributed to the sometimes incomplete lab inspection process. He further stated that third-quarter inspections sometimes did not occur because they fell in the summer months, when there is less laboratory activity on campus.

Inadequate administration of inspections increases the risk that unsafe conditions will not be identified and further increases the potential for accidents and injuries, litigation, and regulatory sanctions.

**Recommendation 4**

We recommend that the campus:

a. Update campus IIPP safety inspection policies related to HMM to address responsibility for the performance of inspections and ensure that inspections are being properly conducted.

b. Conduct COSE IIPP safety-related inspections related to HMM in accordance with campus and regulatory requirements, and monitor corrective action of inspection findings.

c. Inspect safety-related equipment in accordance with campus and regulatory requirements.

**Campus Response**

a. The campus EHS department will update the campus IIPP safety inspection policies related to HMM to address the performance of inspections.

b. COSE will ensure that COSE IIPP safety-related inspections are performed and include the monitoring of corrective actions.

c. The campus will develop protocols for the inspection of safety-related equipment in accordance with regulatory requirements.
HAZARDOUS MATERIALS ADMINISTRATION

REGULATORY REPORTS AND FILINGS

Certain regulatory reports filed by the campus contained outdated and inaccurate information.

We found that:

- The Hazardous Materials Business Plan (HMBP) filed with the San Francisco Department of Public Health contained outdated and incomplete information, including an aged HAZMAT inventory that was dated 2011; an incomplete map of facilities containing HAZMAT; incomplete information regarding the emergency response plan and employee training; and an incorrect vendor as the emergency spill response contact.

- The biennial report filed with the Environmental Protection Agency (EPA) stated that the campus was not treating any hazardous waste, but the HMBP provided a description of onsite neutralization of certain acidic wastes.

California Health and Safety Code (HSC) §25500 states that businesses shall formulate business and area plans relating to the handling and release of HAZMAT, and that these plans should be filed with the entity’s Certified Uniform Program Agency (CUPA). It further states that the plan shall include an annual inventory of hazardous substances handled by the business; emergency response plans and procedures in the event of a reportable or threatened release of a hazardous material; evacuation plans and procedures; and a description of training for all new employees and annual training for those involved in emergency response.

Title 22 §66262.41 states that generators who ship any hazardous waste off-site within the United States shall prepare and submit a copy of a biennial report to the EPA by March 1 of each even-numbered year, and that the report shall include the entity’s identification number; the name and identification number for each transporter used; a detailed description of the hazardous waste shipped off-site; and a description of any efforts to reduce the volume and toxicity of waste generated on-site. The EHS director stated that the misstatements in the biennial report and HMBP were likely due to a misunderstanding of the report requirement at the time it was completed in early 2012.

Inaccurate regulatory reporting exposes the campus to the possibility of fines, citations, and further regulatory oversight.

**Recommendation 5**

We recommend that the campus instruct staff to ensure that regulatory reports contain up-to-date and accurate information.
**Campus Response**

The campus will ensure that regulatory reports are accurate and complete prior to submission.

Expected completion date: February 2014

**CHANGES IN HAZARDOUS MATERIALS INVENTORY**

Administration of the campuswide HAZMAT inventory needed improvement.

We found that the campus:

- Did not have updated procedures for creating and maintaining an inventory that included HAZMAT on campus. As a result, the HAZCOMM inventory was incomplete, and the inventory included in the HMBP was outdated.

- Did not have complete procedures for reporting HAZMAT inventory changes that occurred due to purchases, gifts, or donations.

Title 8 §5194(e)(1) states that employers shall maintain a list of the hazardous substances known to be present.

HSC §25500 states that businesses shall formulate business and area plans relating to the handling and release of HAZMAT, and that these plans shall include an annual inventory of hazardous substances handled by the business.

HSC §25510 states that regulated entities are required to report to their CUPA, within 30 days of the change, any amendments to the HAZMAT inventory that include a 100 percent or more increase in the quantity of a previously disclosed material, or a handling of a previously undisclosed hazardous material.

The director of EHS stated that resource constraints contributed to a delay in addressing the issue of a campuswide inventory of HAZMAT.

Inadequate inventory of HAZMAT undermines campus plans to ensure safety in the handling of the materials, as well as the ability of emergency responders to identify and remediate specific hazards when responding to emergency situations.

**Recommendation 6**

We recommend that the campus:

a. Update procedures for creating and maintaining an inventory that includes HAZMAT on campus.

b. Develop procedures for reporting HAZMAT inventory changes that occur due to purchases, gifts, or donations.
Campus Response

The campus will update its policies for creating and maintaining inventory of HAZMAT and reporting inventory changes that occur due to purchases, gifts, or donations.

Expected completion date: February 2014

LABORATORY STANDARD

COSE did not have a current, comprehensive CHP outlining the safety processes for employees working in labs.

We found that:

- The COSE CHP did not include standard operating procedures (SOP), and the role of chemical hygiene officer (CHO) was not clearly defined.

- The COSE CHP was last updated in 2007 and was intended as a template for instructional supervisors and principal investigators to use in creating CHPs for the processes and hazards specific to their labs. However, we requested CHPs from ten principal investigators, and only one responded with a complete plan.

- The COSE CHP listed a person who was no longer with the university as the CHO for the entire campus, as well as a committee that did not exist as the CHO for COSE.

Title 8 §5191 states that all employers engaged in the laboratory use of hazardous chemicals shall develop and carry out a written CHP that sets forth procedures, equipment, personal protective equipment, and work practices that are capable of protecting employees from the health hazards presented by hazardous chemicals used in the workplace. It further states that the CHP shall include SOP relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals. It also states that the employer shall designate the personnel responsible for the implementation of the CHP, including the assignment of a CHO and, if appropriate, establishment of a chemical hygiene committee. Finally, it states that the employer shall review and evaluate the effectiveness of the CHO at least annually and update it as necessary.

The executive director of operations for COSE stated that although he was aware that the CHPs required improvement, time and resource constraints had slowed progress toward resolving the issues. He further stated that enforcement was sometimes problematic in the academic research environment.

The lack of a current, comprehensive CHP increases the risk of accidents and injuries and the potential for regulatory sanctions.
Recommendation 7

We recommend that the campus:

a. Review and update the COSE CHP to include SOP and to clearly define the role of the CHO, and review CHPs for individual labs to ensure they are current and comprehensive.

b. Appoint an appropriate CHO for the campus and for COSE.

Campus Response

a. COSE will review and update its CHP to include SOP and define the role of the CHO, and review CHPs for individual labs to ensure they are current and comprehensive.

b. The campus will appoint a CHO.

Expected completion date: February 2014

HAZARDOUS WASTE

Administration of hazardous waste storage and disposal needed improvement.

Specifically, we found that:

- A storage room in COSE housed numerous receptacles that appeared to contain HAZMAT, most of which had been transferred to the room from the lab of a faculty researcher who no longer worked on the campus. The materials had been tagged as waste and stored for longer than 90 days, past the date at which they were required to be transported to a proper disposal site.

- COSE did not have policies and procedures that included monitoring and enforcement activities to ensure that faculty and principal investigators were held accountable for properly removing hazardous waste from their labs when they completed their work on campus.

- EHS policies and procedures did not clearly define accountability for the identification and preparation of hazardous waste for transport.

- COSE did not always follow established procedures for the labeling of hazardous waste. Specifically, the labels on HAZMAT in the noted COSE storage room did not conform to procedure and appeared to be mislabeled with inaccurate accumulation time and the generator information.

Title 22 §66262.34 states that a hazardous waste generator may accumulate hazardous waste on-site for 90 days or less provided that the waste is placed in containers, on drip pads, or in containment areas that meet regulatory requirements.
Title 22 §66261.2 states that “waste” means any discarded material in any form. It further defines discarded material as that which is relinquished, and defines relinquished materials as those that are accumulated, stored, or treated before or in lieu of being disposed.

EO 1039, California State University OHS Policy, dated January 1, 2009, states that the designated EHS program administrator is responsible for developing and maintaining health and safety programs that meet the California Code of Regulations and California and Federal Occupational Safety and Health requirements. It further states that the campus president will provide the EHS program administrator authority to develop these programs.

The executive director of operations for COSE stated that the lack of policies and procedures regarding the responsibilities of lab researchers leaving the university contributed to the confusion regarding the contents of the lab in question. He further stated that the COSE health and safety specialist handled the identification and labeling of the containers in accordance with her understanding of the regulations, absent written policies and procedures addressing this type of situation. The director of EHS stated that once he became aware of this situation, he immediately provided detailed instructions on the required procedures to identify and label the waste. In addition, he stated that he could not legally sign hazardous waste transport and disposal documents until the wastes were properly identified and labeled.

Lack of policies and procedures to address the timely, cost-efficient, and legally acceptable disposal of hazardous waste exposes the university to potential regulatory fines and citations and possible cessation of laboratory operations.

Recommendation 8

We recommend that the campus:

a. Immediately resolve the issue of the hazardous waste housed in the cited COSE storage room.

b. Establish policies and procedures for COSE that include monitoring and enforcement activities to ensure that faculty and principal investigators are held accountable for properly removing hazardous waste from their labs when they complete their work on campus.

c. Update EHS policies and procedures to clearly define accountability for the identification and preparation of hazardous waste for transport.

d. Enforce COSE procedures for the labeling of hazardous waste.

Campus Response

a. The hazardous waste in the COSE storage room has been properly characterized, labeled, packaged, and transported off-site to a licensed treatment, storage, and disposal facility for proper treatment and/or disposal.
b. COSE will establish faculty and principal investigators policies and procedures for properly removing hazardous waste from their labs when they complete their work on campus.

c. The campus will update EHS policies and procedures to clearly define accountability for the identification and preparation of hazardous waste for transport.

d. The campus will enforce COSE procedures for the labeling of hazardous waste.

Expected completion date: February 2014

TRAINING

The campus did not consistently provide initial and refresher training to all employees with responsibility for HAZMAT and hazardous waste handling.

Specifically, we found that:

- The campus was unable to provide evidence of training on HAZCOMM requirements, the IIPP, HMM, and the laboratory standard for five of 13 employees, hired in the past two years, who worked with HAZMAT or hazardous waste handling or in campus laboratories.

- FSE and LCA could not provide training session agendas or materials addressing HAZCOMM requirements, the IIPP, HMM, and/or the laboratory standard.

- COSE, FSE, and LCA could not provide evidence that they had conducted regular training sessions on HAZCOMM requirements, the IIPP, HMM, or the laboratory standard. COSE had a hazardous waste refresher training program, but it had not been active since 2006.

Title 8 §5194(h) states that employers shall provide employees with effective information and training on hazardous substances in their work area at the time of their initial assignment and whenever a new hazard is introduced into their work area. It further states that the training shall include information on the applicable regulations; the operations in the employee’s work area where hazardous substances are present; the location and availability of the hazard communication program, including the list of substances and the MSDS; methods and observations used to detect the presence or release of hazardous substances in the work area; the health hazards of the substances in the work area and measures they can take to protect themselves from the hazards; and an explanation of the labeling system and the MSDS and how employees can use this information.

Title 8 §5191(e)(3) states that lab employees shall be trained on the hazards of chemicals present in their work areas at the time of the initial assignment to the work area and prior to assignments involving new exposure situations. It further states that the training should include methods and observations used to detect the presence or release of a hazardous chemical, the physical and health hazards of chemicals in the work area, and the measures employees can take to protect themselves from these hazards, such as appropriate work practices, emergency procedures, and personal protective equipment usage.
Title 8 §3203(a)(7) states that the IIPP will provide for training and instruction to all new employees and to all employees given new job assignments for which training has not previously been received. It further states in §3203(b)(2) that documentation of training shall include the employee name, training dates, type(s) of training, and training providers, and that these records will be maintained for at least one year.

Title 22 §66264.16 states that new employees shall receive introductory training in hazardous waste management procedures relevant to the positions in which they are employed, and that it should occur before they are left unsupervised and annually thereafter. It further states that the facility will maintain records of every employee involved in hazardous waste management, a description of the training provided to these individuals, and records that the training occurred.

EO 1039, California State University OHS Policy, dated January 1, 2009, states that campuses shall develop, implement, and maintain a health and safety program that includes a training program that ensures employees receive adequate safety training for the tasks they are performing and/or that is included in the job description or scope of work.

The executive director of risk management stated that significant and frequent turnover in the senior management at EHS contributed to the lack of required training in the HMM subjects, and to the model of having the safety coordinators in the various colleges and departments ensure the training was being completed. The executive director of operations for COSE stated that resource constraints and competing priorities contributed to the fact that training requirements at COSE had sometimes been overlooked. The senior director of FSE and the associate dean of LCA stated that some of the training requirements were unclear to them and they had relied on former EHS personnel for information, guidance, and safety training in the past.

Inadequate administration of required safety training related to HAZMAT and hazardous waste increases the risk of accidents, injuries, and lawsuits.

**Recommendation 9**

We recommend that the campus consistently provide initial and refresher training to all employees with responsibility for HAZMAT and hazardous waste handling.

**Campus Response**

The campus is implementing a learning management system to deliver, track, and report compliance with initial and refresher training.

Expected completion date: February 2014
## APPENDIX A:
### PERSONNEL CONTACTED

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leslie E. Wong</td>
<td>President</td>
</tr>
<tr>
<td>Sheldon Axler</td>
<td>Dean, College of Science and Engineering (COSE)</td>
</tr>
<tr>
<td>Michel Blagoyevich</td>
<td>Executive Director of Operations, COSE</td>
</tr>
<tr>
<td>Libby Chang</td>
<td>Project Manager, Environmental Health and Safety (EHS)</td>
</tr>
<tr>
<td>Ronald S. Cortez</td>
<td>Vice President, Administration and Finance/Chief Financial Officer</td>
</tr>
<tr>
<td>Maria Fedel</td>
<td>Compliance Officer, EHS</td>
</tr>
<tr>
<td>Michael Fong</td>
<td>Operations Manager, Biology Stockroom, COSE</td>
</tr>
<tr>
<td>Toby Garfield</td>
<td>Director, Romberg Tiburon Center</td>
</tr>
<tr>
<td>Nancy K. Hayes</td>
<td>Vice President, Administration and Finance/Chief Financial Officer</td>
</tr>
<tr>
<td>(At time of review)</td>
<td></td>
</tr>
<tr>
<td>Chris Johansson</td>
<td>Chemistry Stockroom Manager, COSE</td>
</tr>
<tr>
<td>Steve Lahey</td>
<td>Director, Creative Arts Technical Services, College of Liberal and Creative Arts (LCA)</td>
</tr>
<tr>
<td>Brita Larsson</td>
<td>Lab Coordinator, Romberg Tiburon Center</td>
</tr>
<tr>
<td>Yvonne Le</td>
<td>Instructional Support Technician, COSE</td>
</tr>
<tr>
<td>Franz Lozano</td>
<td>Budget Officer</td>
</tr>
<tr>
<td>Michael Martin</td>
<td>Interim Associate Vice President, Human Resources, Safety and Risk Management</td>
</tr>
<tr>
<td>Charles Meyer</td>
<td>Senior Director, Facilities and Service Enterprises</td>
</tr>
<tr>
<td>Aaron Nevatt</td>
<td>Director, EHS</td>
</tr>
<tr>
<td>Gayle Orr-Smith</td>
<td>Emergency Coordinator</td>
</tr>
<tr>
<td>Peter Palmer</td>
<td>Professor, Chemistry and Biochemistry Department, COSE</td>
</tr>
<tr>
<td>Todd Roehrmann</td>
<td>Associate Dean, LCA</td>
</tr>
<tr>
<td>Stephen Smith</td>
<td>Director, Procurement and Support Services</td>
</tr>
<tr>
<td>Linda Vadura</td>
<td>Health and Safety Specialist, COSE</td>
</tr>
</tbody>
</table>
Dear Larry:

We have reviewed Audit Report #13-45, Hazardous Material Management and are providing our responses to the recommendations including an electronic copy of the campus response as requested.

As reflected in our response, SF State is committed to the safety of its students, faculty, and staff and we are taking the steps to insure that the organizational and resource support are available to improve and enhance our campus Hazardous Materials Management practices and procedures.

SF State continues to assess and improve its EH&S function and identify and implement effective controls to manage EH&S risks. Over the last year and half, the university has hired key personnel to augment EH&S staffing in order to ensure safety oversight and compliance.

For example, an EH&S specialist has been hired to develop, implement and administer a Learning Management System to deliver online campus EH&S training. Additionally, a new position dedicated to providing hazardous materials and waste management support for Facilities and Service Enterprises will soon be in place. Currently, we are reviewing the possibility of hiring additional staff to support lab safety and other campus safety needs.

Questions regarding the responses should be directed to Ronald S. Cortez, Vice President and CFO, Administration and Finance at (415) 338-2521 or to Franz Lozano, Acting Internal Auditor at (415) 405-3736.

Sincerely,

Dr. Les Wong
President

FL/cd

Attachment

cc: Ron S. Cortez, Vice President and CFO, Administration and Finance  
    Michael Martin, Interim Associate Vice President, HRSRM  
    Aaron Nevatt, Director, Environmental Health and Occupational Safety, HRSRM  
    Franz Lozano, Acting Internal Auditor
HAZARDOUS MATERIALS MANAGEMENT
SAN FRANCISCO STATE UNIVERSITY
Audit Report 13-45

GENERAL ENVIRONMENT

GOVERNANCE

Recommendation 1

We recommend that the campus:

a. Update written policies and procedures for EHS to include campus-wide and department-specific responsibilities for HAZMAT and hazardous waste handling.

b. Update departmental policies, plans, and other documents providing guidance for critical processes related to HMM, including training and inspections, to ensure that they are complete and do not conflict with each other.

c. Clearly define the roles and responsibilities of IIPP safety coordinators, and develop procedures to ensure that safety coordinators are assigned to each area and are trained in their responsibilities, and that safety information is regularly communicated to them for distribution to their assigned colleges and departments.

d. Establish COSE safety committees in all college departments, and develop methods to communicate workplace safety issues in other campus areas that handle HAZMAT.

Campus Response

In response to the recommendation, the campus will:

a. Update written EHS policies to include campuswide and department specific responsibilities for hazardous materials.

b. Update departmental policies and plans for critical processes related to HMM, including training and inspections.

c. Clearly define IIPP roles and responsibilities including staff training and ensure information is regularly communicated through the campus safety committee.

d. Establish COSE safety committees and develop methods to communicate workplace safety issues in other areas that handle HAZMAT.

Expected completion date: February 2014
INJURY AND ILLNESS PREVENTION PROGRAM

Recommendation 2

We recommend that the campus:

a. Review and update the campuswide IIPP.

b. Develop and implement a department-specific IIPP for the procurement department, and make the IIPP for the LCA art departments readily available to affected employees.

Campus Response

a. The campus will review and update its IIPP.

b. The campus will develop and implement department-specific IIPP for the procurement department, and the LCA art department will make its IIPP readily available to its employees.

Expected completion date: February 2014

HAZARD COMMUNICATION PROGRAM

Recommendation 3

We recommend that the campus:

a. Review and update the campus HAZCOMM program.

b. Review and update the COSE HAZCOMM program, instruct each department within COSE to develop and implement a department-specific HAZCOMM program, and perform periodic inspections to ensure compliance with all program provisions.

c. Develop and implement written HAZCOMM programs for LCA and the procurement department, and perform periodic inspections to ensure compliance with all program provisions.

Campus Response

a. The campus will review and update its HAZCOMM program.

b. COSE will review and update department-specific HAZCOMM programs and perform inspections to ensure compliance with all program provisions.

c. LCA and the procurement department will develop and implement a HAZCOMM program and perform periodic inspections.

Expected completion date: February 2014
INSPECTIONS

Recommendation 4

We recommend that the campus:

a. Update campus IIPP safety inspection policies related to HMM to address responsibility for the performance of inspections and ensure that inspections are being properly conducted.

b. Conduct COSE IIPP safety inspections related to HMM in accordance with campus and regulatory requirements, and monitor corrective action of inspection findings.

c. Inspect safety-related equipment in accordance with campus and regulatory requirements.

Campus Response

a. The campus EHS department will update the campus IIPP safety inspection policies related to HMM to address the performance of inspections.

b. COSE will ensure that COSE IIPP safety related inspections are performed and include monitoring corrective actions.

c. The campus will develop protocols for the inspection of safety-related equipment in accordance with regulatory requirements.

Expected completion date: February 2014

HAZARDOUS MATERIALS ADMINISTRATION

REGULATORY REPORTS AND FILINGS

Recommendation 5

We recommend that the campus instruct staff to ensure that regulatory reports contain up-to-date and accurate information.

Campus Response

The campus will ensure that regulatory reports are accurate and complete prior to submission.

Expected completion date: February 2014

CHANGES IN HAZARDOUS MATERIALS INVENTORY

Recommendation 6

We recommend that the campus:

a. Update procedures for creating and maintaining an inventory that includes HAZMAT on campus.
b. Develop procedures for reporting HAZMAT inventory changes that occur due to purchases, gifts, or donations.

**Campus Response**

The campus will update its policies for creating and maintaining inventory of HAZMAT and reporting inventory changes that occur due to purchases, gifts, or donations.

Expected completion date: February 2014

**LABORATORY STANDARD**

**Recommendation 7**

We recommend that the campus:

a. Review and update the COSE CHP to include SOP and to clearly define the role of the CHO, and review CHPs for individual labs to ensure they are current and comprehensive.

b. Appoint an appropriate CHO for the campus and for COSE.

**Campus Response**

a. COSE will review and update its CHP to include SOP and define the role of the CHO, and review CHPs for individual labs to ensure they are current and comprehensive.

b. The campus will appoint a CHO.

Expected completion date: February 2014

**HAZARDOUS WASTE**

**Recommendation 8**

We recommend that the campus:

a. Immediately resolve the issue of the hazardous waste housed in the cited COSE storage room.

b. Establish policies and procedures for COSE that include monitoring and enforcement activities to ensure that faculty and principal investigators are held accountable for properly removing hazardous waste from their labs when they complete their work on campus.

c. Update EHS policies and procedures to define clearly accountability for the identification and preparation of hazardous waste for transport.

d. Enforce COSE procedures for the labeling of hazardous waste.
Campus Response

a. The hazardous waste in the COSE storage room has been properly characterized, labeled, packaged and transported off site to a licensed treatment, storage, and disposal facility for proper treatment and/or disposal.

b. COSE will establish faculty and principal investigators policies and procedures for properly removing hazardous waste from their labs when they complete their work on campus.

c. The campus will update EHS policies and procedures to clearly define accountability for the identification and preparation of hazardous waste for transport.

d. The campus will enforce COSE procedures for the labeling of hazardous waste.

Expected completion date: February 2014

TRAINING

Recommendation 9

We recommend that the campus consistently provide initial and refresher training to all employees with responsibility for HAZMAT and hazardous waste handling.

Campus Response

The campus is implementing a learning management system to deliver, track, and report compliance with initial and refresher training.

Expected completion date: February 2014
November 7, 2013

MEMORANDUM

TO: Mr. Larry Mandel
    University Auditor

FROM: Timothy P. White
      Chancellor

SUBJECT: Draft Final Report 13-45 on Hazardous Materials Management,
         San Francisco State University

In response to your memorandum of November 7, 2013, I accept the response
as submitted with the draft final report on Hazardous Materials Management,
San Francisco State University.

TPW/amd