

**HAZARDOUS MATERIALS MANAGEMENT**

**SAN FRANCISCO STATE UNIVERSITY**

**Report Number 00-16  
September 29, 2000**

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## **CONTENTS**

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### **INTRODUCTION**

Purpose.....	1
Scope And Methodology.....	2
Background .....	2
Opinion.....	3
Executive Summary.....	4

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### **OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES**

Hazardous Materials Administration.....	6
Plant Operations Safety Coordinator Control Function.....	6
EHOS Hazardous Materials Compliance Inspections.....	7
Hazardous Materials Transporters .....	8
Hazardous Materials Communication, Reporting, and Training.....	9
Hazardous Materials Training .....	9
Emergency Eyewash and Shower Equipment .....	12
Hazardous Waste Determination, Storage, Transportation, and Disposal .....	13
Hazardous Materials System Controls .....	15

## APPENDICES

APPENDIX A:	Personnel Contacted
APPENDIX B:	Chemical & HAZMAT Technology Insurance Analysis
APPENDIX C:	Campus Response
APPENDIX D:	Chancellor's Acceptance

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## ABBREVIATIONS

CCR	California Code of Regulations
CHT	Chemical & HAZMAT Technology
COSE	College of Science and Engineering
CSU	California State University
EHOS	Environmental Health & Occupational Safety
EO	Executive Order
EPA	Environmental Protection Agency
FSE	Facilities and Service Enterprises
HAZCOMM	Hazard Awareness and Communication Program
HAZMAT	Hazardous Material(s)
HMM	Hazardous Materials Management
H&SC	Health & Safety Code
HVAC	Heating, Ventilation, & Air Conditioning
HWMG	Hazardous Waste Management Guide
IES	Integrated Environmental Systems
IIPP	Injury and Illness Prevention Program
MSDS	Material Safety Data Sheet(s)
PI	Principal Investigator
PPE	Personal Protection Equipment
RCRA	Resource Conservation and Recovery Act
SAM	State Administrative Manual
SFSU	San Francisco State University
TSD	Transfer, Storage and Disposal

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## INTRODUCTION

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### PURPOSE

Our overall audit objective was to ascertain the effectiveness of policies and procedures concerning Hazardous Materials Management (HMM), determine the adequacy of controls over hazardous materials and waste, and ensure compliance with related governmental regulations.

Within the overall audit objective, specific goals included determining whether:

- ▶ administration and management of the HMM program provide clear lines of organizational authority and responsibility, include maintenance of required registrations and permits, and ensure compliance with the key regulatory reporting requirements;
- ▶ hazardous materials (HAZMAT) and waste management policies and procedures are adequately documented;
- ▶ HAZMAT purchasing and receipt processing are conducted in a controlled environment, and material safety data sheets (MSDS) are obtained and readily accessible to employees;
- ▶ a comprehensive HAZMAT communication program has been established, and effective emergency and contingency plans are in place;
- ▶ inventory records are properly maintained for HAZMAT purchases, and HAZMAT safety and equipment inspections are conducted;
- ▶ HAZMAT maintained in containers and tanks are properly labeled and adequately controlled;
- ▶ hazardous waste transfer, storage, and disposal (TSD) agreements exist between the university and TSD contractors and require the contractors to maintain adequate liability insurance;
- ▶ hazardous waste identification procedures are adequately implemented, and waste transportation and disposal processes are in compliance with governmental regulations;
- ▶ employees who handle HAZMAT or generate waste are adequately trained; and
- ▶ hazardous, biomedical and universal waste is properly labeled and not accumulated on-site for greater than the allowable time.

## SCOPE AND METHODOLOGY

This review emphasized but was not limited to compliance with state and federal laws and campus hazardous materials (HAZMAT) policies, letters and directives. The audit review period was June 1999 to date. At San Francisco State University (SFSU), the Department of Environmental Health and Occupational Safety (EHOS) has overall responsibility for hazardous materials management (HMM).

Our primary focus involved the internal administrative, compliance, and operational controls over the management of the campus HMM function and included visits to three campus units: Biology, Chemistry, and Physical Plant. Specifically, we reviewed and tested:

- ▶ procedures for HAZMAT purchasing, receiving and storage;
- ▶ the use and availability of material safety data sheets (MSDS);
- ▶ HAZMAT communication and training programs, emergency and contingency planning, and related documentation;
- ▶ HAZMAT inventory record keeping practices;
- ▶ procedures for performing HAZMAT safety and equipment inspections;
- ▶ HAZMAT and waste labeling and other forms of required warnings;
- ▶ hazardous waste identification, permit, registration, and manifesting procedures; and
- ▶ the hazardous waste disposal program.

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## BACKGROUND

As a result of a systemwide risk assessment conducted by the Office of the University Auditor during the last quarter of 1999, the Board of Trustees, at its January 2000 meeting, directed that *Hazardous Materials Management* be reviewed.

The proposed scope of such audits as presented in Attachment B, Agenda Item 3 of the January 25-26, 2000 meeting of the Committee on Audit, stated that the review would include the systems and procedures for controlling the purchase, generation, storage, treatment, use and disposal of hazardous materials (HAZMAT) and wastes and responding to hazardous spills. Potential impacts include environmental damage, adverse publicity, excessive costs and legal liabilities, facilities with inordinate health risks, regulatory fines and sanctions, and the inability to identify HAZMAT in emergency situations. *Hazardous Materials Management* was previously audited in 1992 and a follow-up review was completed in 1996.

In 1976, the Federal Resource Conservation and Recovery Act (RCRA) was enacted to address solid waste

generated nationwide and the growing public concern regarding HAZMAT health risks, waste generation, and waste disposal. RCRA initiated the “cradle to grave” tracking and management of hazardous waste – that is, from the generator to transporter to treatment, storage or disposal. RCRA regulations addressed, but were not limited to, the following management issues: a) generation of hazardous waste, b) hazardous waste treatment, transportation, storage, and disposal, c) federal and state reporting, d) federal, state, or local permits/registration, and e) waste minimization.

RCRA provided the federal government with the authority to authorize states to develop, implement and enforce their own HAZMAT and waste management regulations. However, the state programs must be as stringent or broader in scope than the federal regulations. In 1992, California received such authority from the Environmental Protection Agency (EPA). Most of the California regulations are codified in the Health & Safety Code (H&SC) and the California Code of Regulations (CCR); specifically, Titles eight and twenty-two. The California Department of Toxic Substances Control is responsible for enforcing the enacted codes and administrative laws.

All CSU campuses purchase some amount of HAZMAT that results in the generation of hazardous waste. To limit regulatory compliance risks and control waste processing costs, the campuses enter into contracts with waste transfer, treatment, storage, and disposal companies. For the most part, campus Environmental Health and Safety (EH&S) departments are responsible for developing, implementing, and monitoring programs that assure compliance with state and federal hazardous materials and waste regulations. Other services provided by EH&S include, but are not limited to, waste consulting and pick-up; transfer, treatment, storage, and disposal coordination; waste tracking and record keeping; employee and student communication and training; and emergency/contingency planning.

The systemwide report related to the 1992 Office of the University Auditor review identified several HAZMAT and waste management topics that required further attention. Specifically, concerns were expressed over training, inspections, waste manifesting, material safety data sheets (MSDS), inventory record keeping, and the monitoring of contractors for adequate insurance and current registration. As a result, the Chancellor’s Office developed a sample Hazardous Waste Management Guide (HWMG) to assist the campus administrators in understanding and complying with applicable health, safety and environmental laws and regulations. The HWMG covered the basic elements involved in understanding hazardous materials management but was not designed to serve as a policy and procedure manual. The HWMG was intended to be a sample document that could be tailored to, and serve, local campus needs.

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## **OPINION**

We visited the San Francisco State University (SFSU) campus from May 8, 2000, through June 9, 2000, and audited the procedures in effect at that time.

In our opinion, the administration and management of the Hazardous Materials Management (HMM) program provided reasonable assurance that SFSU was in compliance with applicable regulations and, for the most part, the HMM function operated effectively. Areas in need of improvement are referenced in the executive summary.

## **EXECUTIVE SUMMARY**

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

### **HAZARDOUS MATERIALS ADMINISTRATION [6]**

#### **PLANT OPERATIONS SAFETY COORDINATOR CONTROL FUNCTIONS [6]**

Controls over the Plant Operations safety coordinator function needed improvement. Maintenance of a consistent and proactive safety coordinator function ensures compliance with the SFSU HAZCOMM and IIPP programs and state regulations.

#### **EHOS HAZARDOUS MATERIALS COMPLIANCE INSPECTIONS [7]**

The Environmental Health and Occupational Safety (EHOS) Department did not conduct the 1999 Plant Operations hazardous materials (HAZMAT) compliance inspection. Conducting HAZMAT inspections reduces IIPP and state regulatory compliance risk.

#### **HAZARDOUS MATERIALS TRANSPORTERS [8]**

The campus used a purchase order rather than the required contract with a hazardous material transporter. In addition, the existing insurance coverage maintained by another transporter did not meet new (May 5, 2000) systemwide requirements. CSU insurance risks and liability exposure are reduced when contracts are executed with HAZMAT transporters and current insurance requirements are met.

### **HAZARDOUS MATERIALS COMMUNICATION, REPORTING, AND TRAINING [9]**

#### **HAZARDOUS MATERIALS TRAINING [9]**

Controls over employee hazardous materials (HAZMAT) orientation and refresher training were in need of improvement. Properly trained employees reduce job related injuries and ensure an appropriate response in the event of an emergency.

#### **EMERGENCY EYEWASH AND SHOWER EQUIPMENT [12]**

In certain instances, emergency eyewash and shower equipment was not installed and inspected in compliance with state regulations. Compliance with such regulations increases the likelihood that emergency facilities will operate effectively in the event of an accident.

## **HAZARDOUS WASTE DETERMINATION, STORAGE, TRANSPORTATION, AND DISPOSAL [13]**

Controls over hazardous waste labeling and satellite waste accumulation storage areas needed improvement. Properly labeled and stored hazardous waste reduces operational mishaps and job-related injuries.

## **HAZARDOUS MATERIALS SYSTEM CONTROLS [15]**

Data access and file backup controls over data maintained on personal computers within the Environmental Health and Occupation Safety (EHOS) Department were unsatisfactory. Adequate system access security and records protection helps to preserve and safeguard EHOS's information assets.

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## OBSERVATIONS, RECOMMENDATIONS, AND CAMPUS RESPONSES

### HAZARDOUS MATERIALS ADMINISTRATION

#### PLANT OPERATIONS SAFETY COORDINATOR CONTROL FUNCTION

Controls over the Plant Operations safety coordinator function needed improvement.

The SFSU Hazard Communication (HAZCOMM) and Injury and Illness Prevention (IIPP) programs require that each college or department that utilizes hazardous materials (HAZMAT) appoint a safety coordinator to work with departmental supervisors and Environmental Health and Occupational Safety (EHOS) to ensure that program requirements are met. Our review disclosed the following instances where the Plant Operations safety coordinator had not ensured compliance with the HAZCOMM and IIPP programs:

- ▶ Plant Operations safety coordinators did not conduct and document semi-annual safety/hazard inspections for 1999 and 2000.
- ▶ An inventory was not taken of Plant Operations HAZMAT during 1999 or 2000. A review of twenty-six 1999-2000 HAZMAT purchases disclosed that only five materials purchases were included on the most recent Hazardous Materials Disclosure Form maintained by EHOS.
- ▶ Material Safety Data Sheets (MSDS) were not maintained for all hazardous materials used in Plant Operations. We selected twenty-six materials that required a MSDS to be in the Plant Operations Department and found that eighteen of the forms were not on file or readily accessible.

CCR Title 8 §3203 (a)(4) states that the IIPP should include scheduled periodic inspections to identify and evaluate hazards and unsafe conditions and work practices. The SFSU IIPP requires that departments conduct inspections of their work areas at least semi-annually.

H&SC §25505 (3)(d) requires employers to annually report its hazardous materials inventory or submit a certification statement to the city and/or county. The SFSU HAZCOMM program requires the safety coordinators to develop and maintain an inventory of all hazardous substances in the workplace and on jobsites.

CCR Title 8 §5194(g)(1) and (8), respectively, state that employers shall have a MSDS for each hazardous substance, which they use. Further, the employer shall maintain copies of the required MSDS for each hazardous substance in the workplace, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s).

The SFSU HAZCOMM program requires safety coordinators to establish procedures to ensure that each new hazardous chemical has a current MSDS on file. Further, MSDS shall be readily accessible to employees during each work shift.

The EHOS hazardous materials coordinator stated that the Facilities & Service Enterprises (FSE) employee responsible for taking and maintaining the Plant Operations inventory was on a leave of

absence, and the responsibility had not been re-assigned. The Plant Operations director stated that MSDS could be obtained via personal computers located in the various trade shops or in the Plant Operations Department office. Additionally, MSDS's are maintained in EHOS in their centralized file.

Failure to maintain a consistent and proactive Plant Operations safety coordinator control function increases the risk of non-compliance with the SFSU HAZCOMM and IIPP programs and state regulations.

### **Recommendation 1**

We recommend that the campus:

- a. develop and implement formalized procedures to ensure that Plant Operations HAZMAT IIPP inspections and inventories are conducted on a scheduled basis; and
- b. review and modify existing Plant Operations procedures to ensure that all MSDS are maintained and readily accessible to employees, which may include instructing employees on how to obtain MSDS data on-line via personal computers.

### **Campus Response**

We concur. Plant Operations Safety Program Manager and Safety Program Coordinator positions have been established. A department manager and administrative assistant have been assigned to these responsibilities. The overall program framework is outlined in a Safety Program Overview memo from the Safety Program Manager.

- a. Procedures for conducting semi-annual safety inspections is outlined in paragraph 3e of the Safety Program Overview. As outlined, the appointed Safety Coordinator will perform the quality assurance role of inspecting signed copies of the semiannual reports. Reports not received as scheduled will be referred to the Program Manager for resolution.
- b. The procedure for maintaining file copies of the current MSD's in each work area is outlined in paragraph 4e of the Safety Program Overview. Due to the large number of employees in diverse locations the department has chosen to maintain hard copies of the MSDS documents in the applicable work area.

## **EHOS HAZARDOUS MATERIALS COMPLIANCE INSPECTIONS**

The Environmental Health and Occupational Safety (EHOS) Department did not conduct the 1999 Plant Operations HAZMAT compliance inspection.

The SFSU Injury and Illness Prevention Program (IIPP) requires that EHOS conduct inspections at least annually. The inspections should include, but are not limited to, annual fume hood certifications, eyewash and emergency showers, and hazardous waste management.

CCR Title 8 §3203 states that the IIPP shall at a minimum include procedures for identifying and evaluating work place hazards including scheduled periodic inspections to identify unsafe conditions and work practices. Inspections shall be made to identify and evaluate hazards.

The EHOS hazardous materials coordinator stated that, due to the level of construction work that took place during 1999, the 1999 inspection of Plant Operations was postponed. He further stated that a Plant Operations inspection was scheduled for 2000.

Failure to conduct HAZMAT inspections increases the risk of non-compliance with the campus IIPP policies and state regulations.

### **Recommendation 2**

We recommend that the campus:

- a. conduct the 2000 EHOS IIPP inspection of the Plant Operations Department as soon as possible; and
- b. establish procedures to notify the associate vice president for budget planning & resource management of any future IIPP inspection postponements suggested by EHOS.

### **Campus Response**

- a. We concur. The 2000 EHOS IIPP inspection of the Plant Operations Department was completed on September 14, 2000.
- b. We concur. The EHOS Director will verbally notify the Associate Vice President for Budget Planning and Resource Management of any future IIPP inspection postponements.

## **HAZARDOUS MATERIALS TRANSPORTERS**

The campus used a purchase order rather than the required contract with a hazardous material transporter. In addition, the existing insurance coverage maintained by another transporter did not meet new (May 5, 2000) systemwide requirements.

We noted that:

- ▶ Waste transport liability insurance coverage maintained by Chemical & HAZMAT Technology (CHT) was not aligned with CSU Policy Manual for Contracting & Procurement (412.07 – Contracts Involving Hazardous Materials). (See Appendix B)
- ▶ The SFSU relationship with Integrated Environmental System (IES), a biohazard waste transporter, was not governed by the CSU model contract for hazardous material removal.

The CSU Policy Manual for Contracting & Procurement (412.07 - Contracts Involving Hazardous Materials) states that contracts involving the handling, removal or disposal of hazardous materials

shall be developed in accordance with the CSU model contract for hazardous material removal, and comply with all State and Federal requirements.

The contracts coordinator stated that procurement had failed to obtain a certificate of insurance for the required amount from CHT; however, the contractor has been advised that the campus will require proper insurance coverage in January 2001 when their current policy expires. The EHOS director stated that a blanket purchase order was used instead of a contract for IES because IES billing for HAZMAT removal was limited to \$3,000 per year.

HAZMAT contractor insurance coverage that is below the required minimum and agreements not governed by model contracts increase CSU insurance risk and liability exposure.

### **Recommendation 3**

We recommend that the campus:

- a. ensure that all HAZMAT contractors maintain the minimum insurance coverage or conduct and document a risk identification and evaluation if campus management believes that a contractor's current insurance liability coverage is adequate;
- b. raise the coverage limits of existing insurance contracts once their contractor insurance or contract has expired, whichever event occurs first; and
- c. enter into a contract, rather than use a blanket purchase order, for removal of all hazardous material.

### **Campus Response**

- a. We concur. The campus will ensure all hazardous material contractors maintain the minimum insurance coverage.
- b. We concur. Coverage limits of existing insurance will be raised once their contractor insurance or contract has expired.
- c. We concur. The blanket purchase order ended in June 2000. That vendor (IES) will now work as subcontractor to another hazardous materials contractor (CHMT). All future agreements with hazardous materials transporters will follow the CSU model contract for hazardous material removal.

## **HAZARDOUS MATERIALS COMMUNICATION, REPORTING, AND TRAINING**

### **HAZARDOUS MATERIALS TRAINING**

Controls over employee hazardous materials (HAZMAT) orientation and refresher training were in need of improvement.

We noted that:

- ▶ A review of orientation training records for 11 Facilities & Service Enterprises (FSE) employees hired during 1999 and 2000 disclosed that training for eight of the employees had not taken place until six to fourteen months after their start date. In addition, orientation training records could not be located for the other three employees.
- ▶ A review of orientation training records for 10 Biology and Chemistry employees hired during 1999 and 2000 showed that only one employee had received orientation training within the first few days of employment. Orientation training records could not be located for seven employees and the other two employees received training approximately five months after their hire date.
- ▶ Training records for 15 FSE employees disclosed that six employees had not attended refresher training in 1999 or 2000, five employees attended refresher training only in 2000, and one employee attended refresher training only in 1999.
- ▶ Training records for 12 Biology and Chemistry employees disclosed that 11 employees had not attended refresher training in 1999 or 2000. The remaining employee attended a class in May 1999 but had not attended training during 2000.
- ▶ The College of Science and Engineering (COSE) had not determined the frequency to be used for HAZMAT refresher training.

CCR Title 8 §5194(h)(1), *Hazard Communication*, requires that employers provide employees with 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. Information and training may relate to general classes of hazardous substances to the extent appropriate and related to reasonably foreseeable exposures on the job.

The SFSU Injury and Illness Prevention Program (IIPP) requires that that principal investigators (PI's), managers and/or supervisors provide job specific training to their staff at the time of initial hire and whenever a new hazard is introduced.

The EHOS, Biology, and Chemistry HAZCOMM programs assign responsibility for training to the department supervisors and/or safety coordinators.

CCR Title 8§5191(f)(2), *Occupational Exposure to Hazardous Chemicals in Laboratories*, states that the frequency of refresher information and training shall be determined by the employer.

The Plant Operations director stated his belief that EHOS was responsible for HAZCOMM orientation training. The EHOS compliance specialist stated that orientation training and record maintenance responsibilities were discussed in past HAZCOMM training sessions and supervisory meetings. The

COSE health and safety specialist stated that training had fallen behind during 1999 and that there was no mechanism in place to alert her of all new employees.

Failure to ensure that all employees attend required HAZMAT training increases the risk of job related injuries and inappropriate responses in the event of an emergency or release of hazardous substances in the work place.

#### **Recommendation 4**

We recommend that the campus:

- a. implement an employee acknowledgement form to record completion of HAZMAT orientation training;
- b. establish procedures to use attendance rosters with pre-printed names of expected HAZMAT training attendees as a means to quickly identify employees who have not participated in the required training;
- c. establish procedures whereby the Human Resources Department would periodically provide a list of new employees to the COSE health and safety specialist and the EHOS compliance specialist, which could be used to monitor compliance with orientation training regulations and policy; and
- d. determine refresher training expectations and frequency requirements for the COSE.

#### **Campus Response**

- a. We concur. The campus IIPP was revised in May 2000 and contains forms IIPP-1 and IIPP-2. One of these forms will be used by the supervisor and each new employee as the employee acknowledgement form to record completion of hazardous materials orientation training. Compliance will be assessed during the 2001 EHOS annual safety audit. The College of Science and Engineering (COSE) has developed a revised Certificate of Safety Orientation and a Record of Job-Specific Orientation to document employee acknowledgement of orientation training. Two new employee orientation handbooks have also been developed.
- b. We concur. EHOS will work closely with all department chairs to compile employee information and provide the required training. All hazardous material handlers will receive Hazard Communication training by EHOS and will receive hazard specific training by the supervisors. For example, the COSE IIPP has been modified to require department chairs to submit a list of employees to the COSE Health and Safety Specialist at the start of each semester. These lists will be compared to the new employee list from Human Resources and used to schedule orientations and track attendance.
- c. We concur. A procedure is now in place whereby the Human Resources Department provides a monthly list of new employees to the EHOS Compliance Specialist who in turn submits the list of all COSE new employees to the COSE Health and Safety Specialist.

- d. We concur. The COSE IIPP has been modified to specify HAZMAT refresher training at least every three years beginning in Spring 2001. At a minimum, training must include a review of Hazard Communication, Chemical Hygiene Plan and Hazardous Waste Management.

## **EMERGENCY EYEWASH AND SHOWER EQUIPMENT**

In certain instances, emergency eyewash and shower equipment was not installed and inspected in compliance with state regulations.

We noted that:

- ▶ Emergency eyewash and shower equipment had not been installed at the Central Plant, and eyewash equipment had not been installed in rooms #112 and #726 of the Chemistry Department.
- ▶ The Heating, Ventilation, and Air Conditioning Shop (HVAC) eyewash/shower was last inspected in November 1999, the Paint Shop eyewash/shower was last inspected in February 2000, and there were no records to show that the Shipping and Receiving eyewash/shower had ever been inspected.

CCR Title 8 §5162(a)(c)(d) states that emergency eyewash and shower equipment shall be provided at all work areas where, during routine operations or foreseeable emergencies, the eyes of an employee may come into contact with a substance which can cause corrosion, severe irritation or permanent tissue damage or which is toxic by absorption. Water hoses, sink faucets, or showers are not acceptable eyewash facilities. Further, eyewash and showers shall be in accessible locations that require no more than 10 seconds for the injured person to reach. Eyewash and showers shall be located so that one person can use both at the same time. The eyewash and shower control valve shall be designed so that the water flow remains on without requiring the use of the operator's hands.

CCR 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.

The Physical Planning and Development vice president stated that eyewash and shower equipment deficiencies were due in part to budget constraints. The Plant Operations director stated that the Central Plant eyewash and shower equipment would be located at adjacent locations. The EHOS technician stated that Paint and HVAC shop inspections were taking place on a monthly basis but, due to a misunderstanding between himself and the student assistant assigned to inspect the equipment, the inspection cards were not updated. He further stated that he was uncertain as to whether he had a complete list of all the eyewash and shower equipment on campus.

Non-compliance with eyewash and shower equipment regulations and failure to perform monthly inspections increases the risk that emergency equipment will not operate effectively in the event of an accident.

### **Recommendation 5**

We recommend that the campus:

- a. assess all work areas and take appropriate actions to ensure that eyewash and shower equipment is installed as required by CCR Title 8 §5162;
- b. establish formalized procedures to ensure monthly inspections of eyewash and shower equipment and up-to-date inspection records; and
- c. review and update the EHOS eyewash and shower equipment master inspection list to ensure accuracy and completeness.

### **Campus Response**

- a. We concur. EHOS has assessed all work areas and submitted the location of all the areas in need of an eyewash to FSE. A purchase order has been processed to purchase 16 wall mounted Speakman eyewashes and a work order ticket for new eyewash installation is in place. Installation is expected to be completed by mid December 2000.
- b. We concur. The EHOS eyewash and safety shower monthly activation records have been revised to include a signature of review by the EHOS Director.
- c. We concur. The EHOS eyewash and safety shower annual inspection records have been revised to include a signature of review by the EHOS director and an annual signature of completion by an FSE representative. This master list of eyewash and shower equipment will be sent to FSE annually to review and notify EHOS of any additional or changed installations or locations.

## **HAZARDOUS WASTE DETERMINATION, STORAGE, TRANSPORTATION, AND DISPOSAL**

Controls over hazardous waste labeling and satellite waste accumulation storage areas needed improvement.

During our inspections of Plant Operations shops and Biology and Chemistry laboratories/classrooms, we noted the following:

### **► Biology:**

- Room #128 - Champagne was found in a refrigerator reserved for hazardous material (HAZMAT) storage even though a sign on the refrigerator indicated that food was not to be stored in the refrigerator.
- Room #445 – An unlabeled leaky battery and contaminated mercury (waste) were stored with HAZMAT in a secondary container within a fume hood.

- Room #404 – Cultures were placed in an untied biohazard bag and deposited in the classroom garbage receptacle.
- Room #132 – A warning sign was not posted on a fume hood identifying it as a satellite waste accumulation station.

▶ **Chemistry:**

- Room #828 – Hazardous waste was stored with HAZMAT in a secondary container within a fume hood.
- Room #726 – A warning sign was not posted on a fume hood identifying it as a satellite waste accumulation station.
- Rooms #706 and #631 – A warning sign was not posted on a fume hood identifying it as a satellite waste accumulation station.

- ▶ **Auto Shop:** Two hazardous waste tags (i.e., labels) attached to waste containers did not include the campus name, address, and telephone number.

SFSU Hazardous Waste Guidelines state that hazardous waste labels should include generator information; chemical or trade name; physical properties; hazard category; and the date accumulation began. A properly completed SFSU Hazardous Waste Tag must be affixed to the accumulation container when waste begins to accumulate. The guidelines also state that if waste accumulation is to occur, a special area in the lab must be designated as a satellite accumulation area and must be well planned to avoid incompatible storage of chemicals.

CCR 8 §5164(a) states that substances which, when mixed, react violently, or evolve toxic vapors or gases, or which in combination become hazardous by reason of toxicity, oxidizing power, flammability, explosibility, or other properties, shall be separated from each other in storage by distance, by partitions, or otherwise, so as to preclude accidental contact between them.

The College of Science and Engineering health and safety specialist stated that, in a few instances, the principal investigators or supervisors were new and may not have been fully aware of the storage or labeling requirements; however, in most instances the exceptions were not justifiable. The EHOS hazardous materials coordinator stated that he forgot to check the labels on the two hazardous waste containers located outside the Auto Shop.

Failure to properly label and store hazardous waste could result in operational mishaps and job related injuries.

**Recommendation 6**

We recommend that the campus re-emphasize the importance of compliance with hazardous waste labeling and storage policy and regulations and include specific checks for compliance during semi-annual IIPP inspections performed by safety coordinators.

### **Campus Response**

We concur. EHOS will continue to educate and train the campus community on hazardous waste labeling and storage policy and regulations. Effective January 2001, EHOS will require the completion of a quarterly hazardous materials self-inspection checklist. EHOS will also review compliance with labeling and storage requirements during the annual IIPP audit.

## **HAZARDOUS MATERIALS SYSTEM CONTROLS**

Data access and file backup controls over data maintained on personal computers within the EHOS department were insufficient.

Personal computer access controls were limited to physical security (i.e., a limited number of individuals had access to the EHOS office). User identification/password controls were not used to limit access to data residing on EHOS personal computers. Additionally, personal computer back-up data files were maintained in the EHOS office rather than an offsite location.

SAM §4989.7 requires state agencies to implement appropriate safeguards to secure workgroup computing configurations and their associated files. Management should protect computing configurations from theft and unauthorized use. Further, policies that mandate standards for the regular back up of all data should be in place. The method and frequency depend on the nature of the data.

The EHOS director stated that general access to personal computers is readily available to EHOS staff and student assistants, and most EHOS documents are available to any faculty or staff with the exception of databases that contain “confidential” information. He further stated that most, if not all, confidential databases are password protected within the file itself and that only the compliance specialist can access such documents.

Failure to provide adequate data security and records protection programs jeopardizes the preservation of EHOS information assets.

### **Recommendation 7**

We recommend that the campus:

- a. review the nature of data maintained on EHOS personal computers and establish appropriate access controls; and
- b. implement procedures to send EHOS backup data files to an offsite location.

### **Campus Response**

- a. We concur. EHOS has reviewed the nature of data maintained on EHOS personal computers. EHOS has installed FoolProof Security software by SmartStuff Software on all the computers. There are two levels of access control, one for staff and one for student employees.
  
- b. We concur. The EHOS Technician, Hazardous Materials Coordinator and Compliance Specialist is responsible for backing up data files on each of the personal computers on a monthly basis and storing the disks at their residence. The Office Coordinator will back up data from all the other computers on a monthly basis and the disks will be stored at the Hazardous Materials Coordinator's residence.

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## APPENDIX A: PERSONNEL CONTACTED

<u>Name</u>	<u>Title</u>
Dr. Robert A. Corrigan	President
Nancy Bagwell	Stock Room Manager, Chemistry
Michel P. Blagoyevich	Director of Operations, College of Science and Engineering
Troy Boone	Stock Room Manager, Biology
Victor Castillo	Director, Plant Operations
John E. Hafernik, Jr.	Chair, Department of Biology
Daniel Ho	Hazardous Materials Coordinator, EHOS
Robert Hutson	Associate Vice President, Facilities & Service Enterprises
David O'Brien	Director, Procurement Department
Jim Orenberg	Chair, Chemistry & Bio-Chemistry
Robert L. Quinn	Vice President, Physical Planning & Development
Ricky Ledbetter	Supervisor, Central Plant Operations
James E. Matheson	Administrative Analyst, Fleet Services
Leroy Morishita	Associate Vice President, Budget, Planning and Resource Management
Don W. Scoble	Vice President, Business & Finance
Robert W. Shearer	Director, Environmental Health & Occupational Safety
Don Smalley	Contracts Coordinator, Procurement
Rich Stevens	Chief Engineer, Central Plant Operations
Bernadette Tano	Compliance Specialist, EHOS
Linda Vadura	Health & Safety Specialist, COSE
Jim Van Ness	Internal Auditor
Carmelita Wu	Administrative & Logistics Services Supervisor, FSE
Harold Yee	Supervisor, Paint
Andrew Yu	EHOS Technician

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## APPENDIX B: CHEMICAL & HAZMAT TECHNOLOGY INSURANCE ANALYSIS

Insurance Type	Chancellor's Office – Insurance Requirements	Chemical & HAZMAT Technology / Policy Expiration Date	Difference
Comprehensive – CSL (Combined Single Limit)	\$5,000,000	\$2,000,000 / 1/28/01	\$3,000,000
Aggregate	\$10,000,000	\$2,000,000	\$8,000,000
Fire – Legal Liability	\$500,000	\$50,000 / 1/28/01	\$450,000
Environmental Impairment – CSL	\$5,000,000	No Insurance Coverage	\$5,000,000
Aggregate	\$10,000,000		\$10,000,000
Auto – CSL	\$1,000,000	\$1,000,000 / 6/8/01	\$0
Uninsured	\$1,000,000	No Insurance Coverage	\$1,000,000
Pollution and/or Asbestos Liability (or Errors & Omissions)	Amount Not Specified	No Insurance Coverage	
Workers' Compensation	As required by California Law	\$1,000,000 (each accident) \$1,000,000 (Disease - Policy Limit) \$1,000,000 (Disease – Each Employee) / 7/9/00	
Sudden & Accidental Pollution – per occurrence	\$2,000,000	No Insurance Coverage	\$2,000,000
Total	\$2,000,000	No Insurance Coverage	\$2,000,000

The CSU Policy Manual for Contracting & Procurement (412.07 - Contracts Involving Hazardous Materials) was issued during 1998. The Chemical & HAZMAT Technology contract expires August 9, 2001.



San Francisco  
State University

Office of the President

1600 Holloway Avenue  
San Francisco, California 94132

Tel: 415/338-1381  
Fax: 415/338-6210

November 7, 2000

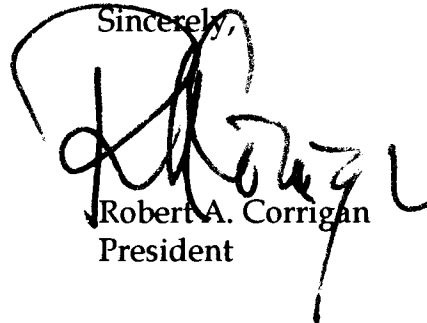
Mr. Larry Mandel  
University Auditor  
The California State University  
401 Golden Shore  
Long Beach, California 90802-4275

Dear Mr. Mandel:

We have carefully reviewed Office of University Auditor Report #00-16 on Hazardous Materials Management at San Francisco State University. The report identified a few areas where additional efforts are needed, and we have already taken actions to implement the recommendations.

Our responses to the recommendations are attached. Questions regarding the responses may be directed to Don Scoble, Vice President for Business and Finance, at 415/338-1323, or Jim Van Ness, Internal Auditor, at 415/338-7183.

Sincerely,



Robert A. Corrigan  
President

JVN/jl

Cc(Without Attachments):

Don W. Scoble, Vice President, Business and Finance  
Thomas La Belle, Provost/Vice President, Academic Affairs  
Robert Shearer, Director, Environmental Health & Occupational Safety  
Robert Huston, Associate Vice President, Facilities & Service Enterprises  
Larry Ware, Associate Vice President/Controller, Fiscal Affairs

James Kelley, Dean, College of Science and Engineering

John Hafernik, Chair, Biology

James Orenberg, Chair, Chemistry & Biochemistry

Michel Blagoyevich, Director of Operations, College of Science and Engineering

Leroy Morishita, Associate Vice President, Budget Planning & Resource Management

Liz Small, Director, Risk Management & Auxiliary Oversight

Denise Fox, Director, Human Resources

Patricia Piotrowski, Interim Director, Procurement Department

Jim Van Ness, Internal Auditor

Campus Response to University Auditor Report Number 00-16 on  
Hazardous Materials Management at San Francisco State University

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**Recommendation 1: Plant Operations Safety Coordinator Control Function**

We recommend that the campus:

- a. Develop and implement formalized procedures to ensure that Plant Operations HAZMAT IIPP inspections and inventories are conducted on a scheduled basis; and
- b. Review and modify existing Plant Operations procedures to ensure that all MSDS are maintained and readily accessible to employees, which may include instructing employees on how to obtain MSDS data on-line via personal computers.

**November 7, 2000 Campus Response**

We concur. Plant Operations Safety Program Manager and Safety Program Coordinator positions have been established. A department manager and administrative assistant have been assigned to these responsibilities. The overall program framework is outlined in a Safety Program Overview memo from the Safety Program Manager. (See Attachment 1)

- a. Procedures for conducting semi-annual safety inspections is outlined in paragraph 3e of the Safety Program Overview. As outlined the appointed Safety Coordinator will perform the quality assurance role of expecting signed copies of the semi-annual reports. Reports not received as scheduled will be referred the Program Manager for resolution.
  - b. The procedure for maintaining file copies of the current MSDS's in each work area is outlined in paragraph 4e of the Safety Program Overview. Due to the large number of employees in diverse locations the department has chosen to maintain hard copies of the MSDS documents in the applicable work area.
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**Recommendation 2: EHOS Hazardous Materials Compliance Inspections**

We recommend that the campus:

- a. Conduct the 2000 EHOS IIPP inspection of the Plant Operations Department as soon as possible; and
- b. Establish procedures to notify the associate vice president for budget planning & resource management of any future IIPP inspection postponements suggested by EHOS.

**November 7, 2000 Campus Response**

- a. We concur. The 2000 EHOS IIPP inspection of the Plant Operations Department was completed on September 14, 2000. (See Attachment A)
  - b. We concur. The EHOS Director will verbally notify the Associate Vice President for Budget Planning and Resource Management of any future IIPP inspection postponements. (See Attachment B)
-

### **Recommendation 3: Hazardous Materials Transporters**

We recommend that the campus:

- a. ensure that all HAZMAT contractors maintain the minimum insurance coverage or conduct and document a risk identification and evaluation if campus management believes that a contractor's current insurance liability coverage is adequate;
- b. raise the coverage limits of existing insurance contracts once their contractor insurance or contract has expired, whichever event occurs first; and
- c. enter into a contract, rather than use a blanket purchase order, for removal of all hazardous material.

#### **November 7, 2000 Campus Response**

- a. We concur. The campus will ensure all hazardous material contractors maintain the minimum insurance coverage.
- b. We concur. Coverage limits of existing insurance will be raised once their contractor insurance or contract has expired. (See items A1. and 4. on Attachment J)
- c. We concur. The blanket purchase order ended in June 2000. That vendor (IES) will now work as subcontractor to another hazardous materials contractor (CHMT). All future agreements with hazardous materials transporters will follow the CSU model contract for hazardous material removal.

### **Recommendation 4: Hazardous Materials Training**

We recommend that the campus:

- a. implement an employee acknowledgement form to record completion of HAZMAT orientation training;
- b. establish procedures to use attendance rosters with pre-printed names of expected HAZMAT training attendees as a means to quickly identify employees who have not participated in the required training;
- c. establish procedures whereby the Human Resources Department would periodically provide a list of new employees to the COSE health and safety specialist and the EHOS compliance specialist, which could be used to monitor compliance with orientation training regulations and policy; and
- d. determine refresher training expectations and frequency requirements for the COSE.

#### **November 7, 2000 Campus Response**

- a. We concur. The campus IIPP was revised in May 2000 and contains forms IIPP -1 and IIPP-2. One of these forms will be used by the supervisor and each new employee as the employee acknowledgement form to record completion of

hazardous materials orientation training. Compliance will be assessed during the 2001 EHOS annual safety audit. (See Attachment C)

The College of Science and Engineering (COSE) has developed a revised Certificate of Safety Orientation and a Record of Job-Specific Orientation to document employee acknowledgement of orientation training. (See Attachments 2 and 3)

Two new employee orientation handbooks have also been developed.

- b. We concur. EHOS will work closely with all department chairs to compile employee information and provide the required training. All hazardous material handlers will receive Hazard Communication training by EHOS and will receive hazard specific training by the supervisors. For example, the COSE IIPP has been modified to require department chairs to submit a list of employees to the COSE Health and Safety Specialist at the start of each semester. These lists will be compared to the new employee list from Human Resources and used to schedule orientations and track attendance. (See Attachments 6 and 10)
- c. We concur. A procedure is now in place whereby the Human Resources Department provides a monthly list of new employees to the EHOS Compliance Specialist who in turn submits the list of all COSE new employees to the COSE Health and Safety Specialist. (See Attachment D)
- d. We concur. The COSE IIPP has been modified to specify HAZMAT refresher training at least every three years beginning in Spring 2001. At a minimum, training must include a review of Hazard Communication, Chemical Hygiene Plan and Hazardous Waste Management. (See Attachment 8)

### **Recommendation 5: Emergency Eyewash and Shower Equipment**

We recommend that the campus:

- a. assess all work areas and take appropriate actions to ensure that eyewash and shower equipment is installed as required by CCR Title 8 § 5162
- b. establish formalized procedures to ensure monthly inspections of eyewash and shower equipment and up-to-date inspection records; and
- c. review and update the EHOS eyewash and shower equipment master inspection list to ensure accuracy and completeness.

### **November 7, 2000 Campus Response**

- a. We concur. EHOS has assessed all work areas and submitted the location of all the areas in need of an eyewash to FSE. A purchase order has been processed to purchase 16 wall mounted Speakman eyewashes and a work order ticket for new eyewash installation is in place. Installation is expected to be completed by mid December 2000. (See Attachment E)
- b. We concur. The EHOS eyewash and safety shower monthly activation records have been revised to include a signature of review by the EHOS Director. (See Attachment F)
- c. We concur. The EHOS eyewash and safety shower annual inspection records have been revised to include a signature of review by the EHOS director and an annual signature of completion by an FSE representative. This master list of eyewash and

shower equipment will be sent to FSE annually to review and notify EHOS of any additional or changed installations or locations. (See Attachment G)

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### **Recommendation 6: Hazardous Waste Determination, Storage, Transportation, and Disposal**

We recommend that the campus re-emphasize the importance of compliance with hazardous waste labeling and storage policy and regulations and include specific checks for compliance during semiannual IIPP inspections performed by safety coordinators.

#### **November 7, 2000 Campus Response**

We concur. EHOS will continue to educate and train the campus community on hazardous waste labeling and storage policy and regulations. Effective January 2001, EHOS will require the completion of a quarterly hazardous materials self-inspection checklist. EHOS will also review compliance with labeling and storage requirements during the annual IIPP audit. (See Attachment H)

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### **Recommendation 7: Hazardous Materials System Controls**

We recommend that the campus:

- a. review the nature of data maintained on EHOS personal computers and establish appropriate access controls; and
- b. implement procedures to send EHOS backup data files to an offsite location.

#### **November 7, 2000 Campus Response**

- a. We concur. EHOS has reviewed the nature of data maintained on EHOS personal computers. EHOS has installed FoolProof Security software by SmartStuff Software on all the computers. There are two levels of access control, one for staff and one for student employees.
  - b. We concur. The EHOS Technician, Hazardous Materials Coordinator and Compliance Specialist is responsible for backing up data files on each of the personal computers on a monthly basis and storing the disks at their residence. The Office Coordinator will back up data from all the other computers on a monthly basis and the disks will be stored at the Hazardous Materials Coordinator's residence.
-

THE CALIFORNIA STATE UNIVERSITY  
OFFICE OF THE CHANCELLOR

BAKERSFIELD

CHANNEL ISLANDS

November 29, 2000

CHICO

**MEMORANDUM**

DOMINGUEZ HILLS

FRESNO

TO: Larry Mandel  
University Auditor

FULLERTON

HAYWARD

FROM: Charles B. Reed 

HUMBOLDT

SUBJECT: Draft Final Report Number 00-16 on *Hazardous Materials Management*,  
San Francisco State University

LONG BEACH

LOS ANGELES

In response to your memorandum of November 28, 2000, I accept the response as submitted with the draft final report on Hazardous Materials Management, San Francisco State University.

MARITIME ACADEMY

MONTEREY BAY

NORTHRIDGE

CBR/cw

POMONA

Enclosure

SACRAMENTO

cc: Dr. Robert A. Corrigan, President

SAN BERNARDINO

SAN DIEGO

SAN FRANCISCO

SAN JOSE

SAN LUIS OBISPO

SAN MARCOS

SONOMA

STANISLAUS