May 7, 2018

RADM Thomas A. Cropper, President
California State University Maritime Academy
200 Maritime Academy Drive
Vallejo, CA 94590

Dear Admiral Cropper:

Subject: Audit Report 18-17, Hazardous Materials Management, California State University Maritime Academy

We have completed an audit of Hazardous Materials Management as part of our 2018 Audit Plan, and the final report is attached for your reference. The audit was conducted in accordance with the Institute of Internal Auditors’ International Standards for the Professional Practice of Internal Auditing.

I have reviewed the management response and have concluded that it appropriately addresses our recommendations. The management response has been incorporated into the final audit report, which has been posted to the Audit and Advisory Services’ website. We will follow-up on the implementation of corrective actions outlined in the response and determine whether additional action is required.

Any observations not included in this report were discussed with your staff at the informal exit conference and may be subject to follow-up.

I wish to express my appreciation for the cooperation extended by the campus personnel over the course of this review.

Sincerely,

Larry Mandel
Vice Chancellor and Chief Audit Officer

c: Timothy P. White, Chancellor
HAZARDOUS MATERIALS MANAGEMENT

California State University
Maritime Academy

Audit Report 18-17
April 9, 2018
EXECUTIVE SUMMARY

OBJECTIVE

The objectives of the audit were to ascertain the effectiveness of operational and administrative controls related to hazardous materials management (HMM) and to ensure compliance with relevant governmental regulations, Trustee policy, Office of the Chancellor directives, and campus procedures.

CONCLUSION

We found the control environment for some of the areas reviewed to be in need of improvement.

Based upon the results of the work performed within the scope of the audit, except for the weaknesses described below, the operational and administrative controls for HMM as of February 15, 2018, taken as a whole, provided reasonable assurance that risks were being managed and objectives were met.

We noted that the campus had an appropriate framework for HMM, with guidance primarily provided by the department of safety and risk management. However, we found that the campus had not formally documented HMM policies and procedures, and did not have a program to ensure that all employees who handled hazardous materials (HAZMAT) and hazardous waste (HAZWASTE) completed required training. We also found that campus departments did not always follow California State University (CSU) and regulatory policies and procedures, including properly labeling and storing HAZMAT and HAZWASTE, conducting periodic workplace inspections, and maintaining a current inventory of HAZMAT. Further, the campus did not always properly and timely inspect safety equipment or ensure that the required CSU report was filed and did not establish an agreement with a HAZWASTE transporter via the CSU model contract.

Specific observations, recommendations, and management responses are detailed in the remainder of this report.
1. POLICIES AND PROCEDURES

OBSERVATION

The campus had not formally documented policies, programs, and other documents providing guidance for processes related to HMM.

We found that:

- The campus Illness and Injury Prevention Program (IIPP) policy was approved on January 25, 2018, which was after the audit start date.

- The campus IIPP, Hazard Communication Safety Program, and Hazardous Materials Management Program procedures were substantially completed at the time of the audit but were still in draft form.

- The Chemical Hygiene Plan was in the very early stages of development at the time of the audit.

Adequate and formalized written HMM policies and procedures, including those for laboratory operations, decrease the risk of injuries and accidents and potential regulatory fines and citations to the campus.

RECOMMENDATION

We recommend that the campus complete development of the Chemical Hygiene Plan and formalize policies, programs, and other documents providing guidance for all processes related to HMM.

MANAGEMENT RESPONSE

We concur. The campus will complete development of the Chemical Hygiene Plan and formalize policies and programs and distribute them to the campus community.

Expected completion: September 2018

2. TRAINING

OBSERVATION

The campus did not have a program to ensure that all employees who handled HAZMAT and HAZWASTE completed required training.
We found that:

- The campus had not developed training courses to cover topics such as the IIPP, hazard communication, and HAZWASTE, primarily because campus procedures had not been formalized, as noted in the observation above. Instead, some training was obtained through third-party vendors, and the safety and risk management office emailed weekly safety communications that addressed several topics, including HAZMAT, to the campus community.

- The campus did not have a process to monitor compliance with initial and refresher training, including identification of all employees required to complete HMM training and notification to employees with overdue or incomplete training.

- Records of completed HMM training were not always maintained.

Effective administration of safety training helps to ensure compliance with required program provisions; increases awareness of HAZMAT, HAZWASTE, and injuries and accidents; and reduces the potential of risk and liability to the campus.

RECOMMENDATION

We recommend that the campus:

a. Develop formal HMM training courses to cover topics such as the IIPP, hazard communication, and HAZWASTE.

b. Ensure that all employees who handle HAZMAT and HAZWASTE complete required initial and refresher training, including notification to employees with overdue or incomplete HAZMAT and HAZWASTE training and follow through to ensure that this training is completed.

c. Maintain records of completed HMM training.

MANAGEMENT RESPONSE

We concur. In addition to the Solano County-approved HMM program that was delivered to campus personnel in 2016, as well as “at a glance” type communications to campus throughout 2017, the campus will now formalize HMM training courses to cover topics such as IIPP, hazard communication, and HAZWASTE. The campus will ensure all employees handling HAZMAT and HAZWASTE complete the required initial and refresher training as applicable by regulatory standards and will follow up on incomplete training throughout the year. Additionally, the campus will ensure maintenance of the records that reflect completed training.

Expected completion: September 2018
3. HAZARDOUS MATERIAL

OBSERVATION

Campus departments did not always label and store HAZMAT in accordance with regulatory and campus requirements.

We reviewed 14 locations that stored HAZMAT, including three instructional labs, three locations at the waterfront, two locations at the Training Ship Golden Bear (TSGB), three locations at facilities, two locations at receiving, and the Physical Education and Aquatics Center (PEAC), to evaluate whether HAZMAT was properly labeled and stored.

We found that:

- At all locations, HAZMAT stored in secondary containers was not properly labeled.

- At one location, compressed gas cylinders were not properly stored. Specifically, we found that four full oxygen cylinders were not separated from three full propane cylinders by a minimum distance of 20 feet or by a non-combustible barrier at least five feet high as required by Title 8 of the California Code of Regulations (CCR).

- At two locations, safety data sheets (SDS) were not always updated. For example, we found two SDS printouts regarding HAZMAT that had been issued in the late 1980s.

Proper labeling and storage of HAZMAT communicates potential danger, and maintaining current SDS printouts or access to the online SDS database helps to ensure the safety of employees and students who come in contact with HAZMAT.

RECOMMENDATION

We recommend that the campus:

a. Ensure that departments properly label and store HAZMAT in accordance with regulatory and campus requirements.

b. Maintain current SDS printouts in all locations that store HAZMAT and do not have immediate access to the online SDS database.

MANAGEMENT RESPONSE

We concur. The campus will work with departments to ensure proper storing and labeling of HAZMAT as prescribed by regulatory and campus requirements. The campus will maintain current SDS via both electronic databases and hard-copy printouts at all locations that store HAZMAT.

Expected completion: September 2018
4. HAZARDOUS WASTE

**OBSERVATION**

Campus departments did not always label and store HAZWASTE in accordance with regulatory and campus requirements.

We reviewed five locations that had hazardous, universal, or electronic waste, including two instructional labs, one location at the waterfront, one location at the TSGB, and one location at receiving, to evaluate whether HAZWASTE was properly labeled and stored.

We found that:

- At two locations, HAZWASTE was not properly stored in closed containers. Further, at these same locations, HAZWASTE containers either were not labeled or had a label that did not indicate the accumulation start date.

- At two locations, HAZWASTE was not labeled and did not include the accumulation start date. It was our understanding that HAZWASTE containers were emptied weekly; however, it was not clearly documented when the actual transfer of HAZWASTE from the satellite location to the main waste location occurred.

- At three locations, containers of universal waste, such as used batteries or fluorescent lamps, either were not labeled or had a label that did not state an accumulation start date.

- At one location, electronic waste was not properly stored, and the accumulation start date was not indicated. For example, a used TV monitor staged on a wood pallet and a weathered cardboard box holding various electronic parts were stored outside.

Proper labeling, storage, and timely disposal of HAZWASTE reduces the likelihood of accidents and injuries, as well as potential risk and liability to the campus.

**RECOMMENDATION**

We recommend that the campus ensure that departments properly label and store HAZWASTE in accordance with regulatory and campus requirements.

**MANAGEMENT RESPONSE**

We concur. The campus will ensure that departments properly label and store HAZWASTE in accordance with regulatory standards and campus-specific requirements.

Expected completion: September 2018
5. INJURY AND ILLNESS PREVENTION PROGRAM

OBSERVATION

The campus did not always perform mandatory IIPP workplace inspections.

We found that campus departments were not always conducting periodic workplace inspections, mainly because campus IIPP procedures had not been formalized.

Performing regular and systematic workplace inspections helps to ensure compliance with the campus IIPP, increases the likelihood of identifying unsafe conditions, and reduces potential risk due to accidents and injuries, including litigation and regulatory fines and penalties.

RECOMMENDATION

We recommend that the campus ensure that departments perform regular and systematic workplace safety inspections in accordance with the campus IIPP.

MANAGEMENT RESPONSE

We concur. The campus will ensure that departments perform regular and systematic workplace safety inspections in accordance with regulatory standards and as outlined in the campus IIPP.

Expected completion: September 2018

6. INVENTORY

OBSERVATION

Campuswide HAZMAT inventory processes needed improvement.

We found that:

- Although departments maintained SDS detailing the HAZMAT that was on hand or used in campus operations, such as classroom or lab instruction, there was no updated central inventory database or consistent documentation showing that each department performed a periodic inventory of current HAZMAT quantities.

- Procedures for maintaining a complete inventory of all HAZMAT on campus, including purchases, gifts, or donations, were in draft form.

Adequate inventory of HAZMAT supports 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

We recommend that the campus:

a. Create and maintain a complete inventory of HAZMAT on campus.

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

MANAGEMENT RESPONSE

We concur. The campus will implement a formalized and consistent approach to maintaining a complete inventory of HAZMAT on campus, as well as inventory changes that occur due to purchases, gifts, or donations.

Expected completion: September 2018

7. SAFETY EQUIPMENT INSPECTION

OBSERVATION

The campus did not always properly and timely inspect safety equipment.

We reviewed 18 locations, including four instructional labs, four locations at the waterfront, three locations at the TSGB, three locations at facilities, three locations at receiving, and the PEAC, to evaluate whether required safety equipment inspections were performed.

We found that:

• At 11 locations, fire extinguishers were not inspected monthly.

• At four locations, fire extinguishers appeared to have been inspected monthly, but inspection tags attached to the fire extinguishers did not indicate the inspection date or initials of the inspector.

• At one location, fire extinguishers were not readily accessible, as they were stored in a locked container.

• At one location, there was no eye wash station; instead, there was an eye wash kit that was not properly stocked.

• At two locations, eye wash stations were not inspected monthly.

• At one location, the eye wash station had been inspected, but the inspection tag did not indicate the inspection date or initials of the inspector.

• At one location, the fume hood was not inspected annually.
Proper and timely inspection of safety equipment helps to ensure that safety equipment is in good working condition and reduces the potential risk due to accidents and injuries.

RECOMMENDATION

We recommend that the campus ensure that safety equipment inspections are properly and timely completed.

MANAGEMENT RESPONSE

We concur. The campus will continue to work with departments to ensure that safety equipment inspections are properly and timely completed.

Expected completion: September 2018

8. HAZWASTE TRANSPORTER CONTRACT

OBSERVATION

The campus did not always use the CSU model contract to execute written contracts with HAZWASTE transporters.

We reviewed two third-party contractors that transport HAZWASTE for the campus and found that one did not have a written agreement, as required by Integrated California State University Administrative Manual (ICSUAM) §5412.00, Section 700, Hazardous Materials Removal Services Contracts. In addition, the insurance requirement outlined in chancellor’s office Technical Letter RM 2012-01, CSU Insurance Requirements, was not fulfilled.

Specifically, the contractor transported and disposed of campus electronic waste (e-waste), submitted the e-waste recycling certificates as evidence of the activity to the campus, and did not charge a fee for these services. However, the required subsequent zero-dollar purchase order was not established prior to commencement of work.

Campus procurement guidelines stated that “Requirements for acquiring services may be of a very complex nature. All requests for services should be submitted via a requisition. Services of a more complex nature may require additional terms and conditions, performance requirements or unique payment terms. At a minimum, a requisition for a service contract should include the proposed scope of work, specific work products or services to be provided, any included tangible goods to be delivered, any applicable performance indicators, payment provisions, and the term of the contract. No work should commence nor should contractors be advised to start work until an authorized contract has been issued.”

CSU contracts and purchase orders that include required risk management provisions, and service and payment terms reduce risk and liability exposure.
RECOMMENDATION

We recommend that the campus use the CSU model agreement to execute written contracts, obtain required insurance with HAZWASTE transporters, and establish the appropriate type of purchase order to accompany the agreement.

MANAGEMENT RESPONSE

We concur. The campus will adopt the CSU model agreement to execute written contracts specific to HMM and obtain required insurance with HAZWASTE transporters. The campus will establish the appropriate type of purchase order to accompany the agreement.

Expected completion: September 2018

9. REGULATORY REPORTING

OBSERVATION

The campus did not always submit an annual health and safety program report to the chancellor’s office.

We found that the campus did not submit the required annual health and safety program report to the systemwide Office of Risk Management for fiscal years 2015/16 and 2016/17.

Submission of annual health and safety reports decreases the risk that critical compliance events or situations will not be disclosed or remediated in a timely manner.

RECOMMENDATION

We recommend that the campus provide annual health and safety reports to the systemwide Office of Risk Management.

MANAGEMENT RESPONSE

We concur. The campus will provide annual health and safety reports to the systemwide Office of Risk Management.

Expected completion: September 2018
GENERAL INFORMATION

BACKGROUND

The Environmental Protection Agency (EPA) works with the state of California to enforce the Resource Conservation and Recovery Act (RCRA), which was enacted in 1976 to address growing public concern regarding health risks, waste generation, and waste disposal surrounding HAZMAT. According to the RCRA, the federal government can authorize states to develop, implement, and enforce their own HAZMAT and waste management regulations so long as the regulations are as stringent or broader in scope than federal regulations. In 1992, the EPA granted California the authority to develop its own regulations, most of which are codified in the California Health and Safety Code and in Titles 8 and 22 of the CCR. Title 8 of the CCR addresses HAZMAT safety, including labeling, safety data sheets and training, and the requirement to establish a written Hazard Communication Program and an Injury and Illness Prevention Program. Title 22 of the CCR addresses HAZWASTE management with regard to accumulation, on-site storage limits, transport and disposal.

Two CSU Executive Orders (EO) provide additional guidance regarding campus HMM. EO 1039, Occupational Health and Safety, requires campuses to develop, implement, and maintain a health and safety program to address identified hazards; and EO 1069, Risk Management and Public Safety, mandates that campuses delegate systemwide administrative oversight and programmatic responsibility.

The California State University Maritime Academy (Cal Maritime) campus purchases HAZMAT for both instructional and research purposes, most prominently in colleges that focus on marine transportation, marine engineering, and marine engineering technology. In addition, campus maintenance departments such as custodial services, facilities, the boathouse, and the auto shop 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 use HAZMAT generate HAZWASTE that is subject to strict regulation for safe and proper storage, transport, and disposal.

The responsibility for establishing and maintaining effective policies regarding environmental health and safety issues at Cal Maritime rests with the campus president. The campus department of safety and risk management (SRM) oversees HMM, including HAZWASTE on campus; serves as the liaison with campus and regulatory agencies for issues related to environmental compliance and occupational safety; and provides assistance to faculty, staff, students, and visitors in protecting their health and safety. In addition, SRM’s responsibility extends to the TSGB when the ship is in port at Cal Maritime. When the TSGB is at sea, the captain and director of marine programs has full authority, including management of HAZMAT and HAZWASTE, and must comply with other laws and requirements, such as those of the United States Coast Guard.

SCOPE

We visited the Cal Maritime campus from January 22, 2018, to February 15, 2018. Our audit and evaluation included the audit tests we considered necessary in determining whether
administrative and operational controls are in place and operative. The audit focused on procedures in effect from July 1, 2015, through February 15, 2018.

Specifically, we reviewed and tested:

- The general control environment over campus HAZMAT, including clear lines of organizational authority and responsibility, HAZMAT risk assessment, and current written policies and procedures.
- HMM, including systems and procedures for controlling the purchase, generation, storage, use, and disposal of HAZMAT; compliance with labeling to communicate contents and hazards; and regulatory registration and permits.
- HAZWASTE activities related to proper identification, storage, and monitoring to ensure that accumulated HAZWASTE does not remain on campus longer than allowable; and evaluation of contract services for the transport and disposal of HAZWASTE.
- Compliance with federal and state regulations, including the Hazard Communication Program and the Injury and Illness Prevention Plan, along with processes for scheduled safety inspections and corrective action; and an effective emergency and contingency plan in place for HAZMAT and/or HAZWASTE spills and exposures.
- Required training for employees, including staff and faculty, who handle or may encounter HAZMAT and/or HAZWASTE. These trainings include initial and refresher hazard communication and HAZWASTE and CSU IIPP.

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.

Our testing and methodology, which was designed to provide a review of key administrative and operational controls, included interviews, walkthroughs, and detailed testing on certain aspects of the campus HMM program. Our review was limited to gaining reasonable assurance that essential elements of campus HMM were in place and did not examine all aspects of the program.

CRITERIA

Our audit was based upon standards as set forth in federal and state regulations and guidance; CSU Board of Trustee policies; Office of the Chancellor policies, letters, and directives; campus procedures; and other sound administrative practices. This audit was conducted in conformance with the Institute of Internal Auditors’ International Standards for the Professional Practice of Internal Auditing.

This review emphasized, but was not limited to, compliance with:

- United States EPA, Resource Conservation and Recovery Act
• California Health and Safety Code (HSC) Division 10, *Uniform Controlled Substances Act*
• California HSC Division 20, *Miscellaneous Health and Safety Provisions*
• CCR Title 8, *Industrial Relations*
• CCR Title 22, Division 4.5, *Environmental Health Standards for the Management of Hazardous Waste*
• EO 1039, *California State University - Occupational Health & Safety Policy*
• EO 1069, *Risk Management and Public Safety*
• ICSUAM §5000, *Contracts and Procurement*
• CSU Technical Letter RM 2012-01, *CSU Insurance Requirements*
• Cal Maritime *Injury and Illness Prevention Program Policy*
• Cal Maritime *Procurement Guidelines*

**AUDIT TEAM**

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