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September 13, 2019

Dr. Adela de la Torre, President
San Diego State University
5500 Campanile Drive
San Diego, CA 92182

Dear Dr. de la Torre:

Subject: Audit Report 19-04, Health and Safety, San Diego State University

We have completed an audit of *Health and Safety* as part of our 2019 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 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

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The California State University
Audit and Advisory Services

HEALTH AND SAFETY
San Diego State University

Audit Report 19-04
August 6, 2019

EXECUTIVE SUMMARY

OBJECTIVE

The objectives of the audit were to ascertain the effectiveness of operational and administrative controls related to health and safety (HS) and to ensure compliance with relevant federal and state regulations; Trustee policy; Office of the Chancellor (CO) directives; and campus procedures.

Additionally, the audit reviewed the status of the recommendations made in the California State Auditor (CSA) Audit Report 2017-119, the state audit review of HS conducted in 2017 at four California State University (CSU) campuses, including San Diego State University (SDSU).

CONCLUSION

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 HS as of June 6, 2019, taken as a whole, provided reasonable assurance that risks were being managed and objectives were met.

Overall, the campus had a framework for HS in which the environmental health and safety (EHS) department provided guidance to the colleges and departments. However, we found that certain campus corrective actions did not adequately address CSA recommendations on student and employee training. Our review also found that oversight and supervision of student organizations conducting activities that include risks with hazardous materials (HAZMAT) and hazardous waste (HAZWASTE) needed improvement. These clubs worked independently with toxic and combustible materials in campus facilities, but were not subject to supervisory oversight and mandatory safety training. Also, the campus did not always label HAZMAT and HAZWASTE containers in accordance with regulatory requirements. Furthermore, the campus did not always conduct regular maintenance and inspections of the working conditions of safety equipment and did not submit annual HS program reports to the CO.

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

OBSERVATIONS, RECOMMENDATIONS, AND RESPONSES

CSA Recommendation Status

The following are observations on the status of recommendations made in the CSA Audit Report 2017-119.

1. STUDENT TRAINING

OBSERVATION

The procedures implemented in response to CSA observations regarding student HS training needed improvement.

The CSA reviewed the adequacy of training provided to students in laboratory settings and issued three related recommendations (51, 54, and 56 in Appendix A). The CSA recommended that the campus require students in laboratory settings to sign forms acknowledging that they had received proper HS training and direct responsible departments and faculty to maintain these forms for a retention period of three years. It further recommended that the campus perform reviews at least annually to ensure that all departments were using the forms and complying with the retention requirement. The CSA directed the campus to implement the acknowledgement form and monitoring procedures by the fall 2018 semester, and set a May 2018 deadline for written directives regarding form retention.

In June 2019, the CSA reviewed the one-year response submitted by the campus in April 2019 and marked as fully implemented the recommendations regarding the requirement of the form (51) and communication to the relevant departments of the requirement (54). The recommendation regarding the annual review process (56) remained pending based on the campus response that the remediation was in progress.

We reviewed the campus responses to the CSA and the procedures implemented as a result of the CSA audit and found that:

- The campus did not meet the deadlines imposed by the CSA and, in some cases, did not meet the proposed extended implementation dates. The campus is still in the process of conducting the annual review process, with an expected completion date of July 2019.
- Forms were not always completed or retained as required in the new procedures. We selected 16 students in eight laboratory classes and requested the students' acknowledgment forms. Of these, one form was not signed by the student and three were signed by students late in the semester. In addition, forms were not retained for one class section.

Effective administration of student safety training increases safety awareness and reduces potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus re-communicate to all appropriate college administrators, staff, and faculty of the procedures and expectations regarding HS training for students in a laboratory setting, including the proper timing, completion, and retention of the acknowledgment forms.

MANAGEMENT RESPONSE

We concur. The campus will re-communicate to appropriate administrators, staff, and faculty of the procedures and expectations regarding HS training for students in a laboratory setting. The campus will also make the necessary modifications to accommodate the required and recommended improvements to student HS training.

Estimated completion date: January 31, 2020

2. EMPLOYEE TRAINING**OBSERVATION**

The campus had not adequately addressed the CSA's recommendations regarding employee training.

The CSA reviewed the campus method of providing training to employees and the steps taken to monitor employee completion of required training and issued three related recommendations (34, 38, and 42 in Appendix A). The CSA first recommended that the campus identify all employees required to take specialized HS training and those who had not yet completed the training. It further recommended that the campus make required training available to employees and establish procedures for ensuring that employees had received all required training. Additionally, the CSA recommended that the campus regularly monitor employee training records to ensure that all employees have received required training. The CSA set a completion date of June 2018 for the identification of untrained employees and December 2018 for making required training available to employees. The recommendation for monitoring employee training records was to be implemented as of the report's release date in April 2018.

In June 2019, the CSA reviewed the one-year response submitted by the campus in April 2019 and marked as fully implemented the recommendations to identify all employees who had not completed required HS training (34). However, the CSA marked the findings regarding provision of training programs (38) and monitoring of training completion (34) as partially implemented.

We conducted a review of campus responses to the CSA and the procedures implemented as a result of the CSA audit and found that:

- The campus did not meet the deadlines imposed by the CSA and, in some cases, did not meet the proposed extended implementation dates.

- The procedures developed by the campus did not fully describe how it will ensure that employees have been notified of and received access to all required training.
- The procedures developed by the campus do not specifically describe how training completion will be monitored and how records will be archived.

Adequate administration of HS training increases safety awareness and reduces potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Revise its procedures to describe how it will ensure that employees have received notice of and access to all required training.
- b. Revise its procedures to describe how it tracks and monitors employee training records to ensure timely and comprehensive compliance with all requirements.

MANAGEMENT RESPONSE

We concur. The campus will:

- a. Revise its procedures to describe how it will ensure that employees receive notice of and access to all required training.
- b. Revise its procedures to describe how it tracks and monitors employee training records to ensure compliance with all requirements.

Estimated completion date: January 31, 2020

Areas Reviewed Not Covered by CSA

3. STUDENT ORGANIZATIONS

OBSERVATION

Oversight and supervision of student organizations conducting activities that included risks with HAZMAT and HAZWASTE needed improvement.

We found five recognized student organizations (RSO) that maintained workspaces on campus and conducted activities involving HAZMAT and/or generated HAZWASTE. These included:

- Rocket Project
- Aztec Racing
- Aztec Electric Racing
- Aztec Baja Racing
- Design-Build-Fly

We discussed the activities of these RSOs with management in Student Life and Leadership, the division responsible for RSO activities, RSO faculty advisors, and the environmental health and safety department (EHS). We found that oversight and responsibility for safety at RSOs, including supervision of students working with various hazards and the administration of safety training, were not clearly defined and often was not documented. There was also a lack of enforcement of campuswide safety standards in RSO workspaces. In our review, we noted the following:

- There was no mandatory training requirement for members of RSOs regarding the handling of HAZMAT, disposal of HAZWASTE, and general workshop and lab safety.
- At one location, a RSO stored substances prohibited by the campus.
- At one location, a RSO had accumulated universal waste for more than a year.
- At one location, HAZWASTE was not properly labeled.
- At one location, students affiliated with RSOs were seen consuming food and drinks in a laboratory workspace that stored HAZMAT and HAZWASTE.

Stronger oversight of RSOs helps to ensure that students are informed of potential hazards and necessary safety practices and procedures that can reduce potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Designate the party or parties responsible for maintaining and enforcing HS within RSOs.
- b. Formulate policies and procedures to identify RSOs that engage in hazardous activities during the student organization recognition process, and notify campus parties responsible for the safety elements of their activities.
- c. Develop written policies to address oversight of RSO activities.

MANAGEMENT RESPONSE

We concur. The campus will:

- a. Designate the individuals responsible for maintaining and enforcing HS within RSOs.
- b. Formulate policies and procedures to identify RSOs engaging in hazardous activities during the student organization recognition process. Campus parties responsible for the safety elements of their activities will be notified.
- c. Develop written policies to address oversight of RSO activities.

Estimated completion date: January 31, 2020

4. HAZARDOUS WASTE AND MATERIALS

OBSERVATION

The campus did not always label HAZMAT and HAZWASTE containers, including those for universal waste, in accordance with regulatory requirements.

We reviewed seven laboratory and non-laboratory locations, and we found that:

- At three locations, HAZMAT containers did not have labels identifying the contents of the container or labels providing a written or graphic hazard warning.
- At one location, a HAZWASTE container did not have a label indicating the date the waste was generated and the hazardous properties of the waste.
- At four locations, universal waste was stored without date labels.
- At one location, universal waste was accumulated for more than one year.

Additionally, at one location, we found a chemical spill that had been only partially cleaned, with remaining debris left unattended for several days.

Proper labeling of HAZMAT and HAZWASTE communicates potential danger and reduces the risk of accidents, injuries, and potential liability to the campus, and timely response and cleanup of spills helps reduce the risk of environmental damage and potential exposure of employees to toxins.

RECOMMENDATION

We recommend that the campus remind all personnel involved in handling HAZMAT, HAZWASTE, or universal waste of regulatory requirements regarding proper labeling of containers, requirements for timely disposal, and best practices for handling spills, and provide training as needed.

MANAGEMENT RESPONSE

We concur. The campus will send a reminder to personnel involved in handling HAZMAT, HAZWASTE, or universal waste of regulatory requirements regarding labeling containers, timely disposal, and handling spills. Also, safety training will be provided as needed.

Estimated completion date: January 31, 2020

5. SAFETY EQUIPMENT

OBSERVATION

The campus did not always conduct regular maintenance and inspections of the working conditions of safety equipment.

We reviewed seven laboratory and non-laboratory locations, and we found that:

- In one location, a ductless fume hood did not have its filters replaced and was not annually certified for proper airflow.
- In four locations with HAZMAT, workers would not be able to reach plumbed emergency eyewashes or shower stations within ten seconds.

Regular inspection of and easy accessibility to safety equipment helps to mitigate the risk of injury for employees and students.

RECOMMENDATION

We recommend that the campus:

- a. Ensure that all safety equipment is subject to routine and comprehensive maintenance and inspections.
- b. Install plumbed emergency eyewashes and showers in areas where required, or move covered activities to a space with adequate access to the equipment.

MANAGEMENT RESPONSE

We concur. The campus will:

- a. Ensure that all safety equipment is subject to routine and comprehensive maintenance and inspections.
- b. Install plumbed emergency eyewashes and showers in areas where required, or move covered activities to a space with adequate access to the equipment.

Estimated completion date: January 31, 2020

6. ANNUAL REPORTING

OBSERVATION

The campus did not submit annual HS program reports to the CO and campus president. We found that the campus did not submit the required annual HS program report to the systemwide Office of Risk Management and campus president in 2016, 2017, and 2018. Annual HS program reports provide the CO with necessary information for providing systemwide oversight to campuses.

RECOMMENDATION

We recommend that the campus annually prepare and submit HS program reports to the campus president and CO.

MANAGEMENT RESPONSE

We concur. The report will be completed by October 31, 2019.

GENERAL INFORMATION

BACKGROUND

California state regulations require all employers, including the CSU, to provide a safe and healthy work environment. Each campus has a designated environmental health and safety (EHS) program administrator who is responsible for developing and maintaining a campus HS program.

All 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 may use materials that are known to have properties that are harmful to humans and the environment. Nearly all of the areas that use HAZMAT generate HAZWASTE that is subject to strict regulations for safe and proper storage, transport, and disposal.

California regulations relating to HS are primarily codified in the *California Health and Safety Code* (HSC) and in Titles 8 and 22 of the California Code of Regulations (CCR). California's Division of Occupational Safety and Health (Cal/OSHA) is primarily responsible for the enforcement of the state's occupational HS laws and regulations. Title 8 of the CCR addresses HAZMAT safety, including, but not limited to, training, communication, storage, and safety. Specific to laboratory environments, the *Occupational Exposure to Hazardous Chemicals in Laboratories* standard (8 CCR 5191) requires that the employer designate a chemical hygiene officer and have a written chemical hygiene plan that includes, among other things, provisions for worker training, criteria for the use of personal protective equipment and engineering controls, and standard operating procedures for handling hazardous materials. Title 22 of the CCR addresses HAZMAT waste management.

The primary CSU HS policy is Executive Order (EO) 1039, *Occupational Health and Safety*. This policy requires campuses to develop, implement, and maintain a HS program and also addresses student HS training. EO 1069, *Risk Management and Public Safety*, delegates systemwide administration oversight and programmatic responsibility for environmental HS to Systemwide Risk Management.

At SDSU, the responsibility and authority to develop and maintain the campus Injury and Illness Prevention Program and environmental compliance programs are delegated to the director of EHS. The director of EHS reports to the associate vice president of administration in business and financial affairs. The staff of 14 includes a director, associate director, occupational safety manager, hazardous waste manager, environmental compliance manager, radiation safety officer, assistant radiation safety officer, industrial/chemical hygiene officer, biological safety officer, office administrator, and four compliance specialists. In June 2019, the director retired, and a new director started immediately. SDSU EHS collaborates with all university colleges, departments, and organizations to assist them in the development and implementation of initiatives to create a safe and healthful work environment. University auxiliary and affiliate organizations are responsible for applying similar practices to their respective businesses and activities.

In 2017, due to HS concerns at two CSU campuses, the Joint Legislative Audit Committee directed the CSA to review HS compliance at four campuses (Channel Islands, Sacramento, San Diego, and Sonoma), as well as oversight by the CO. The review noted several issues,

including observations relating to the annual evaluation of chemical plans; monitoring and documenting of student and employee HS training; and consistent and timely inspections of safety equipment. Based on the nature and trends of the observations noted in the CSA review, Audit and Advisory Services informed the Board of Trustees that it would perform reviews at all CSU campuses in 2019.

SCOPE

We visited the SDSU campus from April 22, 2019, through June 6, 2019. Our audit and evaluation included the audit tests we considered necessary in determining whether operational and administrative controls are in place and operative. The audit focused on procedures in effect from January 1, 2016, to June 6, 2019.

Specifically, we reviewed and tested:

- Implementation of recommendations from the 2017 CSA Audit Report related to oversight committees, chemical hygiene plan administration, employee and student safety training, maintenance of engineering controls, and inspections.
- Oversight and administration of the campus HS program, including clearly defined roles and responsibilities; appropriate safety committee; departmental self-audits and monitoring practices; and current policies and procedures.
- The adequacy and availability of safety equipment, including evaluation of the chemical hygiene plan; provision of personal protective equipment; and regular inspections and monitoring of key safeguards and engineering controls.
- Proper storage and safety of HAZMAT, including procurement; maintenance of accurate inventories; appropriate labeling and storage practices; and access controls.
- Communications and training processes, including evaluation of the availability of material safety data sheets, asbestos notifications and signage, and documentation and monitoring of student and employee training.
- Whether appropriate safety programs were in place, when applicable, for health facility operations and medical monitoring of employees.
- Appropriate identification, storage, and monitoring of accumulated HAZWASTE.

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 operational and administrative controls, included interviews, walkthroughs, and detailed testing on certain aspects of the HS program. The review was limited to gaining reasonable assurance that essential elements of the HS program were in place and did not examine all aspects of the

program. We did not re-perform any testwork completed by the CSA in their 2017 audit of SDSU. Instead, for those areas tested by the CSA that were also included in the current audit scope, we reviewed the implementation of campus corrective actions for any noted issues.

CRITERIA

Our audit was based upon standards as set forth in federal and state regulations and guidance; Trustee policy; Office of the Chancellor directives; and campus procedures; as well as sound administrative practices and consideration of the potential impact of significant risks. 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:

- 29 Code of Federal Regulations Part 1910, *Occupational Safety and Health Standards*
- California HSC Division 20, *Miscellaneous Health and Safety Provisions*
- California State Auditor Report 2017-119 Recommendations
- CCR Title 8, *Industrial Relations*
- CCR Title 17, *Public Health*
- CCR Title 19, *Public Safety*
- CCR Title 22, Division 4.5, *Environmental Health Standards for the Management of Hazardous Waste*
- EO 1031, *Systemwide Records/Information Retention and Disposition Schedules Implementation*
- EO 1039, *California State University - Occupational Health & Safety Policy*
- EO 1069, *Risk Management and Public Safety*
- Collective Bargaining Agreement, Unit 6, Article 28, *Health and Safety*
- SDSU *Chemical Hygiene Plan*
- SDSU *Hazardous Materials and Hazardous Waste Management Practice*
- SDSU *Injury and Illness Prevention Program*
- SDSU *Laboratory Hood Certification Program*
- SDSU *Procurement Credit Card Handbook*
- SDSU EHS Department *Employee Health and Safety Training Management*
- SDSU Student Health Services *Cleaning of Exam Rooms Policies and Procedures*

AUDIT TEAM

Audit Manager: Ann Hough
Internal Auditor: Allen Tung

APPENDIX A – CSA RECOMMENDATIONS

Recommendation	Description
34	To ensure the health and safety of employees working with hazardous materials, San Diego should, by June 2018, review the training records of all employees who are required to take trainings related to laboratory safety, hazardous waste, hazard communication, or bloodborne pathogens and identify those who have not taken these trainings.
38	To ensure the health and safety of employees working with hazardous materials, San Diego should, by December 2018, make the required trainings available to employees and establish procedures for ensuring that the employees have received all required trainings.
42	To ensure the health and safety of employees working with hazardous materials, San Diego should, going forward, regularly monitor employee training records to ensure that all employees have received the required trainings.
51	To ensure the health and safety of students in a laboratory setting, beginning in the Fall 2018 semester, San Diego should require departments to have those students required to wear PPE sign the student safety training acknowledgement forms to demonstrate that they have received proper laboratory safety training.
54	To ensure the health and safety of students in a laboratory setting, by May 2018, San Diego should remind all departments to retain student training acknowledgment forms for at least three years after the end of classes.
56	To ensure the health and safety of students in a laboratory setting, beginning in the Fall 2018 semester, San Diego should perform reviews at least annually to ensure that all departments are using the student training acknowledgement forms and are complying with the retention requirement.