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May 8, 2019

Dr. Jeffrey D. Armstrong, President
California Polytechnic State University, San Luis Obispo
1 Grand Avenue
San Luis Obispo, CA 93407

Dear Dr. Armstrong:

**Subject: Audit Report 19-17, Health and Safety,
California Polytechnic State University, San Luis Obispo**

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

**California Polytechnic State University,
San Luis Obispo**

Audit Report 19-17
April 16, 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.

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 HS as of March 8, 2019, 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 HS, with guidance primarily provided by the office of environmental health and safety (EHS). However, we found that some campus departments did not have a documented student HS training program, and training records were not always obtained or kept on file. Additionally, the campus did not always identify employees who required HS training or ensure that required training was assigned and completed. Further, the campus had not performed written hazard assessments for all campus workplaces that necessitated the use of personal protective equipment (PPE), and HS inspections were not always conducted. We also noted that campus departments did not always conduct required maintenance and inspection of certain safety equipment, safety data sheets (SDS) were not always readily accessible, and hazardous waste (HAZWASTE) containers were not always properly labeled or stored. In addition, required laser and radiation signage was not always posted in appropriate locations, and preventive maintenance for ventilation systems for some science buildings was not always performed.

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

OBSERVATIONS, RECOMMENDATIONS, AND RESPONSES

1. STUDENT HEALTH AND SAFETY TRAINING

OBSERVATION

Some campus departments did not have a documented student HS training program, and training records were not always obtained or kept on file as required by Executive Order 1039, *California State University – Occupational Health & Safety Policy*.

We reviewed records from 14 laboratory classes in two colleges that required the use of personal protective equipment (PPE) because of the potential for exposure to biological, chemical, and/or physical hazards to verify whether a student HS training program was implemented and whether students received appropriate laboratory safety training and PPE information. We found that:

- For all five materials engineering laboratory classes in the College of Engineering, we observed the department had an established student HS training program, however the program was not documented. In addition, the department had not maintained records in which students acknowledged receiving HS training.
- For one biological sciences laboratory class within the College of Science and Mathematics (COSAM), the department had a documented student HS training program but had not maintained records showing that the training had been completed, including student acknowledgments. For another biological sciences laboratory class in COSAM, the required training records were missing for four of 20 enrolled students.

A defined and documented student HS training program helps to ensure that students are informed of potential hazards and that necessary safety practices and procedures will be used to reduce potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Define, document, and communicate the responsibility for providing student HS training, including the development and implementation of a student HS training program for all educational activities where there is potential for exposure to biological, chemical, and/or physical hazards and require the use of PPE.
- b. Document all student HS training programs and maintain training records for all students.

MANAGEMENT RESPONSE

- a. We concur and will define, document, and communicate the responsibility for providing student HS training, including the development and implementation of a student HS training program for all educational activities where there is potential for exposure to biological, chemical, and/or physical hazards and require the use of PPE.

- b. We concur and will document all student HS training programs and maintain training records for all students.

Anticipated implementation date: September 30, 2019

2. EMPLOYEE HEALTH AND SAFETY TRAINING

OBSERVATION

The campus did not always identify employees who required HS training or ensure that required training was assigned and completed.

We found that:

- The campus had not consistently identified all employees required to take initial and refresher PPE training or assigned the required courses in the computer-based training system, SkillPort (currently known as CSU Learn). We found that the required courses were primarily assigned to employees in facilities who were identified by their manager and a limited number of laboratory workers.
- Laser safety training had not been formally assigned to employees who were required to take the course, including campus operators of class 3b and 4 lasers. We noted at the time of the audit that the campus was in the process of complying with this requirement.
- Faculty and staff who were assigned a safety course in SkillPort did not always complete the training. We reviewed SkillPort training reports and found that the completion rate for PPE and bloodborne pathogen awareness training was approximately 44 percent and 75 percent, respectively. Additionally, although the EHS department had implemented procedures to monitor compliance and report completion rates to appropriate management for some required HS training topics, these procedures did not cover all HS training, including the topics noted above.

Effective administration of HS training helps to ensure compliance with program provisions, increases safety awareness, and reduces potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Identify all employees who require PPE and laser safety training, and ensure initial and refresher training is provided.
- b. Expand the campus procedures to monitor compliance and report completion rates to appropriate management for all HS training, including the topics noted above.

MANAGEMENT RESPONSE

- a. We concur and will identify all employees who require PPE and laser safety training, and ensure initial and refresher training is provided.
- b. We concur and will expand the campus procedures to monitor compliance and report completion rates to appropriate management for all HS training, including the topics noted above.

Anticipated implementation date: September 30, 2019

3. HAZARD ASSESSMENTS

OBSERVATION

The campus had not performed a written hazard assessment for all campus workplaces that necessitated the use of PPE, as required by California Code of Regulations (CCR) Title 8, §3380, *Personal Protective Devices*.

We noted that the campus was using the assessment module within Risk and Safety Solutions (RSS) to systematically conduct and document hazard assessments in campus laboratory areas, and particularly to identify and communicate PPE requirements for specific laboratory areas. However, RSS is not intended to support hazard assessments for non-laboratory workplaces, and the campus was conducting documented hazard assessments for only some non-laboratory workplace locations that necessitated the use of PPE, primarily in facilities where individuals in skilled trade positions are employed.

Performing hazard assessments to identify hazards in workplaces that necessitate the use of PPE helps to reduce potential injuries, accidents and liabilities to the campus.

RECOMMENDATION

We recommend that the campus implement a process to ensure that hazard assessments are performed and documented for all campus workplaces that necessitate the use of PPE.

MANAGEMENT RESPONSE

We concur, and the campus will implement a process to ensure that hazard assessments are performed and documented for all campus workplaces that necessitate the use of PPE.

Anticipated implementation date: September 30, 2019

4. HEALTH AND SAFETY INSPECTIONS

OBSERVATION

HS inspections were not always conducted in accordance with campus and regulatory requirements.

Under the campus Injury and Illness Prevention Plan (IIPP), departments are required to perform HS inspections at least annually for hazardous waste (HAZWASTE), hazardous material (HAZMAT), and other applicable hazards. We noted that EHS had communicated this requirement to responsible college and department faculty and staff, and EHS conducted random inspections annually to verify whether department inspections were performed and whether appropriate corrective actions were implemented to address exceptions.

However, we found that departments had not fully adhered to campus IIPP requirements. Specifically, we reviewed the records of 14 laboratories and stockrooms and found that departments had not conducted the required annual inspections for nine locations in 2017 and seven locations in 2018.

Proper administration of HS inspections helps to reduce unsafe conditions and the potential for injuries, accidents, litigation, and regulatory sanctions.

RECOMMENDATION

We recommend that the campus:

- a. Establish a process to improve department compliance with performance of required HS inspections, including increased frequency of EHS random inspections as necessary.
- b. Remind all appropriate college administrators, staff, and faculty of the importance of performing and documenting HS inspections as required by the campus IIPP.

MANAGEMENT RESPONSE

- a. We concur and will establish a process to improve department compliance with performance of required HS inspections, including increased frequency of EHS random inspections as necessary.
- b. We concur and will remind all appropriate college administrators, staff, and faculty of the importance of performing and documenting HS inspections as required by the campus IIPP.

Anticipated implementation date: September 30, 2019

5. SAFETY EQUIPMENT INSPECTIONS AND SAFETY DATA SHEETS

OBSERVATION

Campus departments did not always conduct required maintenance and inspection of certain safety equipment, and SDS were not always readily accessible in accordance with regulatory and campus requirements.

We reviewed 25 locations where the campus stored HAZMAT and found that:

- At five locations, the eye wash and/or shower equipment had not been inspected since August 2017 or June 2018, respectively. Additionally, at one location, access to safety equipment was restricted due to clutter.
- At six locations, monthly visual inspections of fire extinguishers were either not performed or not documented between July and November 2018.
- The annual maintenance inspection of fire extinguishers had not been performed at two locations since May 2017 and at one location since December 2017.
- At six locations, SDS binders were not always readily accessible. Additionally, although these locations had a computer with internet access, there was no posted notice explaining how a SDS for chemicals may be found using the campus online SDS database subscription.

Regular maintenance and inspection of safety equipment and accessible chemical SDS help to ensure a healthy and safe environment for employees and students.

RECOMMENDATION

We recommend that the campus:

- a. Conduct regular maintenance and inspections of safety equipment, specifically emergency eye washes and showers and fire extinguishers.
- b. Make SDS printouts readily accessible or post a notice explaining how an SDS for chemicals may be found using the campus online SDS database subscription.
- c. Remind appropriate college administrators, staff, and faculty of the regulatory and campus requirements regarding safety equipment maintenance and inspections and the requirement to maintain SDS.

MANAGEMENT RESPONSE

- a. We concur and will conduct regular maintenance and inspections of safety equipment, specifically emergency eye washes and showers and fire extinguishers.

- b. We concur and will make SDS printouts readily accessible or post a notice explaining how an SDS for chemicals may be found using the campus online SDS database subscription.
- c. We concur and will remind appropriate college administrators, staff, and faculty of the regulatory and campus requirements regarding safety equipment maintenance and inspections and the requirement to maintain SDS.

Anticipated implementation date: September 30, 2019

6. HAZARDOUS WASTE

OBSERVATION

Campus departments did not always properly label and store hazardous waste (HAZWASTE) containers in accordance with campus and regulatory requirements.

We reviewed 25 locations with HAZWASTE, and we found that:

- At two locations, HAZWASTE containers were not always properly labeled with the hazardous properties of the waste.
- At two locations, HAZWASTE containers were not always placed in secondary containment to prevent leaking, spilling, or contact with nearby incompatible material.

Proper labeling and storage of HAZWASTE reduces the risk of accidents, injuries, and potential liability to the campus.

RECOMMENDATION

We recommend that the campus label and store all HAZWASTE in accordance with regulatory requirements and communicate a reminder to appropriate college administrators, staff, and faculty of the requirements.

MANAGEMENT RESPONSE

We concur, and the campus will label and store all HAZWASTE in accordance with regulatory requirements and communicate a reminder to appropriate college administrators, staff, and faculty of the requirements.

Anticipated implementation date: September 30, 2019

7. RADIATION SAFETY PROGRAM

OBSERVATION

The campus did not always post the required items in locations containing radioactive materials or radiation, including notices, instructions, and reports to personnel.

We reviewed three locations where radioactive materials were stored and/or handled, and we found that:

- None of the locations posted all of the required items: a current copy of CCR Title 17, §30255, *Notices, Instructions, and Reports to Personnel*; a copy of applicable licenses for radioactive material; and a copy of the operating and emergency procedures applicable to work with sources of radiation. In addition, when posting these documents was not practical, the campus had not posted a notice describing these documents or stating where they may be examined.
- At one location, a current copy of required department form RH-2364, *Notice to Employees*, was not posted.

In addition, the radiation safety program did not specifically address all the requirements related to required notifications.

Proper notifications in locations containing radioactive materials or radiation decreases the risk of radiation exposure and reduces the risk of potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus:

- a. Post the required items in locations containing radioactive materials or radiation in accordance with CCR Title 17, §30255, *Notices, Instructions, and Reports to Personnel*.
- b. Update and communicate its written processes for the radiation safety program related to notices, instructions, and reports to personnel.

MANAGEMENT RESPONSE

- a. We concur and will post the required items in locations containing radioactive materials or radiation in accordance with CCR Title 17, §30255, *Notices, Instructions, and Reports to Personnel*.
- b. We concur and will update and communicate the written processes for the radiation safety program related to notices, instructions, and reports to personnel.

Anticipated implementation date: September 30, 2019

8. LASER SAFETY PROGRAM

OBSERVATION

The campus did not timely communicate its laser safety program and did not post laser hazard signs in necessary locations.

At the time of the audit, we noted that the campus had a newly developed laser safety program. However, the program requirements had not yet been communicated to campus laser users.

We reviewed three campus locations that housed regulated class 3b and 4 lasers, which pose the greatest potential for serious injury if used improperly, for compliance with the campus laser safety program. We found that:

- At two locations, the required laser hazard signs were not displayed in the most conspicuous places, such as on access doors.
- At one location, the posted signal word “caution” on the access door was not the appropriate signage for locations that house class 3b or 4 lasers. According to the campus laser safety program, the signal word “warning” is required.

Effective administration of the campus laser safety program reduces the risk of potential injuries, accidents, and liabilities to the campus.

RECOMMENDATION

We recommend that the campus communicate the laser safety program to all applicable campus laser users and post proper laser hazard signage as required by the program.

MANAGEMENT RESPONSE

We concur, and the campus will communicate the laser safety program to all applicable campus laser users and post proper laser hazard signage as required by the program.

Anticipated implementation date: September 30, 2019

9. AIR QUALITY MONITORING

OBSERVATION

The campus did not complete preventive maintenance (PM) of ventilation systems for all science buildings.

Specifically, the campus had not performed the required PM for heating, ventilation, and air conditioning (HVAC) systems in 2018 for two of the five science buildings we reviewed.

According to CCR Title 8, §5142, *Mechanically Driven HVAC Systems to Provide Minimum Building Ventilation*, HVAC systems shall be inspected at least annually, and problems found during these inspections shall be corrected within a reasonable time.

Routine PM and inspection of HVAC systems helps to ensure proper equipment operation and ventilation in buildings where chemicals are stored and used.

RECOMMENDATION

We recommend that the campus perform and document annual PM of HVAC systems as required by campus and regulatory requirements.

MANAGEMENT RESPONSE

We concur, and the campus will perform and document annual PM of HVAC systems as required by campus and regulatory requirements.

Anticipated implementation date: September 30, 2019

GENERAL INFORMATION

BACKGROUND

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

All CSU campuses purchase hazardous materials 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 hazardous materials generate hazardous waste 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 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 hazardous materials safety, including, but not limited to, training, communication, storage, and safety. Specific to laboratory environments, the *Occupational Exposure to Hazardous Chemicals in Laboratories* standard (CCR Title 8, §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 hazardous materials waste management.

The primary CSU HS policy is 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 California Polytechnic State University, San Luis Obispo (Cal Poly San Luis Obispo), EHS is responsible for implementing programs that minimize the risk of occupationally related injury or illness and assists the campus in providing a safe and healthful workplace. Programs involve employee training, policies and procedures, and compliance surveys. EHS also helps to ensure the safe use, handling, and storage of HAZMAT and the compliant disposal of HAZWASTE. The director of EHS reports to the associate vice president for facilities management and development, who reports to the senior vice president and chief financial officer of the division of administration and finance.

In 2017, due to HS concerns at two CSU campuses, the Joint Legislative Audit Committee directed the California State Auditor (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 Cal Poly San Luis Obispo campus from January 22, 2019, through March 8, 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, through March 8, 2019.

Specifically, we reviewed and tested:

- Oversight and administration of the campus HS program, including clearly defined roles and responsibilities; appropriate safety and chemical committees; 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 hazardous materials, including procurement; maintenance of accurate inventories; appropriate labeling and storage practices; and access controls.
- Communications and training processes, including evaluation of the hazard communication plan; 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 radiation sources; laser safety; bloodborne pathogens; respiratory protection; and spill containment.
- Appropriate identification, storage, and monitoring of accumulated hazardous waste.

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 in our 2017 Hazardous Materials Management (HMM) audit at Cal Poly San Luis Obispo. Instead, for those areas tested in the HMM audit that are 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:

- 10 Code of Federal Regulations (CFR) Part 20, *Standards for Protection Against Radiation*
- 29 CFR Part 1910, *Occupational Safety and Health Standards*
- California HSC Division 20, *Miscellaneous Health and Safety Provisions*
- 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*
- Cal Poly San Luis Obispo *Bloodborne Pathogen and Exposure Control Plan*
- Cal Poly San Luis Obispo *Chemical Hygiene Plan*
- Cal Poly San Luis Obispo *Hazard Communication Program*
- Cal Poly San Luis Obispo *Hazardous Waste & Materials Procedures*
- Cal Poly San Luis Obispo *Injury and Illness Prevention Plan*
- Cal Poly San Luis Obispo *Laser Safety Program*
- Cal Poly San Luis Obispo *Radiation Safety Manual*

AUDIT TEAM

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Senior Auditor: Marcos Chagollan and Rick Pyles