May 16, 2011

Texas Tech University
Office of the Provost
104 Administration Building
Box 42019
Lubbock, Texas 79409-2019

Re: Lab Safety Program Peer Review

Dear Drs. Smith, Eighmy & Phillips:

At the request of Texas Tech University, an external peer review of the TTU laboratory safety program was conducted on April 4, 2011 – April 6, 2011. The review team included Christina Robertson, Asst. Director, Department of Environmental Health & Safety, Texas A&M University, and Michael Russell, Director, Department of Environment, Health & Safety, University of Kansas.

The intent was to review campus lab safety program efforts at the TTU Lubbock campus to provide critical evaluations of current lab safety practices and procedures; help improve campus lab safety culture; and address concerns related to an ongoing U.S. Chemical Safety Board review of a serious laboratory accident in January 2010.

Attached to this correspondence, please find the report from our peer review visit.

You are to be commended for the good lab safety program efforts you have in place within EHS and other areas and the lab safety cultural change/ideals you are pursuing.

If we may be of further service related to this letter and report, please feel free to contact us.

Thank you.

Sincerely,

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External Peer Review Report
Lab Safety Program at TTU Lubbock Campus

Peer Review Dates: 04/04/2011 – 04/06/2011

INTRODUCTION

The following work directions and information requests were made by the TTU Office of Vice President for Research and The Department of Environmental Health & Safety related to performance of this peer review.

Requested Reviewer Tasks:

- Initial review to focus on TTU safety programs related to laboratory research and creative activities.
- Evaluation of the current state of TTU programs, particularly with respect to adopting best practices that are found at peer reviewer's institution and elsewhere.
- The resources available to conduct the programs at TTU.
- Training for EH&S staff and university personnel related to lab safety.
- Suggestions or observations to improve our programs.

Requested Reviewer Output/Comments:

The management team of EH&S has identified the following areas for review and comment by peer reviewers:

- Resources – Staffing, funding.
- Training – Basic laboratory safety, specific high hazard safety.
- Buy-in – Faculty, TA's, and students.
- Survey procedures – Methods of monitoring, documentation, communication (with particular attention to web presence and electronic communication).
- Institutional support – Programs support from upper administration, deans, department chairs.
- EHS Compensation – Adequate compared to other institutions? Are staff positions and promotion opportunities sufficient to the task?
- Chemical Hygiene Program – Sufficient to the task?
- Biological Safety Program– Sufficient to the task?
- Chemical/biological protocol review - – Sufficient to the task?
- Laboratory security – Adequate?
- Chemical management system– Sufficient to the task and is a better inventory system needed?

PEER REVIEWERS ITEM OF CONCERN

Eyewashes in Laboratories – During reviewer discussions with various lab PI's, Chemistry Department Chair, and Biology Department Chair**,** a concern was expressed about lack of proper eyewashes in numerous laboratories. During visits to several laboratories Reviewers confirmed a lack of appropriate eyewashes in laboratories.

Reviewers recommend that an immediate effort be initiated to survey/assess labs for appropriate eyewashes and that a corrective action plan be designed and established for addressing this issue. For every laboratory where materials that may be injurious to eyes (i.e., chemicals, biologicals, hazardous fluids or solids, etc.) are present, at least one, fixed/plumbed, "hands free" eyewash device must be present per current, applicable ANSI Standard (ANSI/ISEA Z358.1-2009). For larger labs/areas where travel time to such an eyewash within the lab/area is more than 10 seconds, more than one eyewash may be required.

This is an immediate safety issue/concern that should be coordinated by EHS but will require necessary collaboration with many areas. This needs to be handled as an infrastructure improvement project through facilities services and needs to be funded from a central administrative perspective.

PEER REVIEWERS TASKS COMMENTS

Evaluation of the current state of lab safety programs, particularly with respect to adopting best practices that are found at Reviewers' institutions and elsewhere.

Texas Tech's laboratory safety program has a strong start and solid base. Operational policy (OP 60.17: Chemical Hygiene Plan) is in place as well as a campus-wide, written, Chemical Hygiene Plan. Both need input and buy-in from campus community. Reviewers recommend that the OP 60.17 be renamed "Lab Safety Plan" and within it provide necessary policy/procedural direction for compliance with the University's expectations regarding chemical safety, biosafety, laser safety and radiation safety. We believe the "Lab Safety" title will be more meaningful to the campus environment and personnel. Include in the OP specific responsibilities for all groups (administration, faculty, staff, students, and EHS) to ensure everyone understands their role for laboratory safety. Within the OP 60.17 make reference to applicable parts of other written plans (e.g., CHP, BSP, RSP) and specify how EHS will disseminate reports to faculty, including escalation of concerns that are not addressed in a timely manner.

Consider instituting a university laboratory safety committee with faculty members from appropriate areas to ensure a core group can be convened to review issues and propose solutions. This committee could require departmental laboratory safety committees and thusly assign them specific action items.

Resources available to conduct the programs

EHS Laboratory safety program efforts would benefit from one or two additional staff members devoted to laboratory safety inspection and interaction with the faculty. This would allow all laboratories to be inspected annually and give opportunity for EHS staff members to perform pre-work consultations with new faculty members.

Consider departmental laboratory safety committees (modeled after the one in Chemistry) with specific assignments, such as semi-annual inspections of laboratories. EHS representation should be included in the departmental committees.

Training for EHS staff and university personnel

EHS laboratory safety staff should be offered the opportunity to attend the Laboratory Safety Institute's 24-hour laboratory safety course (offered in San Marcos in the summer months). This course would give them additional tools and techniques for performing their lab safety tasks in an effective manner. Training for university personnel appears to be appropriate for general training purposes. Specific high-hazard safety training should be delegated to the PI who is performing the work. EHS can (and does) offer assistance, but laboratory-specific training must remain delegated to the PI. EHS should continue in providing assistance and support to PI's in this area.

Suggestions or observations to improve our programs

Overall, reviewers believe that a campus-wide EHS (oversight/management/advisory) committee would greatly benefit the EHS department and campus EHS program efforts. This committee should report to a high level (e.g., Provost Office) and Chaired by a Senior Administrator (e.g., VP or AVP). The oversight committee could then be charged with coordinating and oversight of the other campus underlying committees in place (e.g., chemical safety, IBC, radiation safety, employee/OSHA safety, SCARS, etc.) to define their tasks and objectives and receive update reports on issues, concerns, and progress. Perhaps SCARS can become this oversight committee. The oversight committee should establish appropriate underlying committees, with one obviously being the laboratory safety committee. The current IBC, Hazardous Materials, and Rad Safety Committees could be blended together to create a comprehensive lab safety committee but can also be distinct subcommittees for addressing their respective issues. Having top administration and EHS director serve on the oversight committee would ensure that the campus understands the level of importance assigned to EHS responsibilities. EHS must have a spot on any/all committees which impact or address campus EHS issues.

Consider instituting a policy for monitoring faculty and staff compliance with EHS requirements through the annual performance evaluation process.

PEER REVIEWERS OUTPUT/COMMENTS

Findings/Observations/Recommendations

1) **Resources – staffing and funding**

Currently, EHS has two full-time staff members dedicated to lab safety for addressing approximately 600+ labs. This is insufficient. EHS Laboratory safety program efforts would benefit from one or two additional staff members devoted to laboratory safety inspection and interaction with the faculty. This would allow all laboratories to be inspected annually and give opportunity for EHS staff members to perform pre-work consultations with new faculty members.

Consider departmental laboratory safety committees (modeled after the one in Chemistry) with specific assignments, such as semi-annual inspections of laboratories. EHS representation should be included in the departmental committees.

Investigate possibility of having additional EHS student workers hired/assigned specifically to support the laboratory safety effort, specifically in regards to assisting staff with inspection of laboratories using less highly hazardous substances, in performing fume hood assessments and other lab safety duties.

Budgetary/funding levels for lab safety were not specifically reviewed; however, we were told by EHS director that funding levels were adequate.

2) **Training**

Training offered by the EHS group in laboratory safety appears to be thorough and effective. Training records are uploaded into a central repository. Consider asking for laboratory-specific training records during the annual laboratory inspection process to verify that PIs are offering it appropriately.

EHS laboratory safety staff should be offered the opportunity to attend the Laboratory Safety Institute's (LSI) 24-hour laboratory safety course (offered in San Marcos in the summer months). This course would give them additional tools and techniques for performing their lab safety tasks in an effective manner. Texas Tech might consider working with LSI to host a laboratory safety workshop for the campus community, including lab safety committee members (at oversight and departmental levels) and those serving on the oversight committee. Additionally, faculty, staff, and students could be encouraged to attend.

3) **Buy-In**

Buy-in by faculty, staff and students appears to be the biggest hurdle faced by the university. This is a prevalent issue across academia. Reviewers believe that a reorganized, over-arching university oversight safety committee structure with other appropriate sub-committees and unit/departmental level committees would help. Implementing a performance measure in employee evaluations will help to promote buy-in. Students must be held accountable for safety by their respective PI's/Faculty. Faculty must be held accountable by their Chairs and Deans. Safety performance evaluation must be part of each and every employee's performance evaluation. Safety performance also needs to be integrated into the academic performance evaluation process. Faculty are often the hardest "employee class" to address. Reviewers would recommend that safety performance evaluation of Faculty needs to be integrated into the Faculty Tenure & Promotion process.

4) **Survey Procedures**

Reviewers found the existing EHS lab safety survey procedures and example documents to be adequate. Our suggestion would be for EHS to develop an internal written SOP for how to document and report inspection results so that variation between individuals preparing such reports is minimized and format is standardized.

5) **Institutional Support**

Institutional support is evident. Meetings with AVP of Research, VP of Research, Provost/SVP, AP, and departmental Chairs of Chemistry and Biology, reinforced that they were promoting a safety culture, particularly in the laboratory setting. EHS staff also exhibit commendable efforts in promoting a positive safety culture.

6) **Compensation**

EHS Director provided a copy of a Peer Salary Survey he had conducted in 2010. Both reviewers' EHS units participated in it. Reviewers did not specifically look at current individual lab safety staff's compensation. Reviewers suggest TTU EHS participating in future CSHEMA salary surveys. Compensation for staff needs to be commensurate with the cost of living and what it takes to acquire the desired necessary quality of individual to fill the role and to come to TTU.

7) **Chemical Hygiene Program – sufficient to the task?**

OP 60.17 and the written campus Chemical Hygiene Plan are good documents. See previous comments for potential improvements. Within EHS, the current program needs one or two additional lab safety staff members and some additional student worker assistance (see discussion above). A focused laboratory safety committee (university-level) would also help to improve the program by the use of peer-to-peer interactions promoting laboratory safety. Departmental level lab safety committees can further help promote lab safety at the unit level. However, they have to be properly tasked, expected to so some work and not become periodic meetings for gripe sessions. Department Chairs need to task their unit committees to accomplish something. EHS needs to be participants on any/all committees so that necessary EHS professional staff assistance can be provided.

8) **Biological Safety Program – sufficient to the task?**

Reviewers have concerns that there is insufficient attention being given to the Biosafety program – through the laboratory walk-throughs, there was one situation in the engineering college that led us to believe researchers might not be aware of the university's protocols in regards to biosafety and bio-research. Current EHS lab safety staff have good biosafety understanding. The additional of one to two personnel in lab safety could help address and improve the biosafety program.

9) **Chemical/biological protocol review – sufficient to the task?**

Biological protocol review appears to be sufficient. It was unclear to reviewers that the recently revamped IBC/Hazardous Materials committee had a clear direction on how to perform a chemical protocol review and whether there is sufficient chemical expertise on the committee. This effort needs to be clarified to ensure the committee understands its role and responsibilities. Reviewers would recommend that IBC/rDNA protocol review be kept separate from chemical hygiene/safety protocol review.

10) **Laboratory security – adequate?**

Reviewers believed laboratory security efforts were adequate.

11) **Chemical management system – sufficient to the task and is a better inventory system needed?**

Utilizing existing EHSassist software through EHS appears to be functioning well for providing a tool that can be used for inventory management. The proposed chemical management system described (i.e., vendor to provide central receiving and system input) appears to be a possible improvement if it serves the campus interests and will be properly supported by central administration.