

**Safety Advisory Committee**  
 March 19, 2010  
 10:00 AM – 12:00 PM

**Minutes**

<b>Committee Member</b>	<b>Representing</b>	<b>Present</b>
Anderson, Erik	Materials Sciences Division	
Bello, Madelyn	Human Resources Advisor	
Blodgett, Paul M.	Environment, Health and Safety Division	<b>X</b>
Cademartori, Helen	Information Technology Division	
Christensen, John N.	Earth Sciences Division	<b>X</b>
Earnest, Thomas N.	Physical Biosciences Division	
Floyd, Jim	Safety Advisory Committee Chair	<b>X</b>
Fujikawa, Brian	Nuclear Science Division	<b>X</b>
Ji, Qing	Accelerator & Fusion Research Division	<b>X</b>
Lukens Jr., Wayne W.	Chemical Sciences Division	<b>X</b>
Lunden, Melissa	Environmental Energy Technologies Division	
Madaras, Ron*	Physics Division	<b>X</b>
Martin, Michael C.	Advanced Light Source Division	
More, Anil V.	Office of the CFO Advisor	
Patterson, Pam	Public Affairs Advisor	
Pollard, Martin	Genomics Division	<b>X</b>
Taylor, Scott E.	Life Sciences Division	<b>X</b>
Tucker, Eugene	Facilities Division	<b>X</b>
Thomas, Patricia M.	Safety Advisory Committee Secretary	<b>X</b>
Walter, Howard	Computing Sciences Directorate	
Wong, Weyland	Engineering Division	<b>X</b>

**Others Present:** Michael Carr, Joe Dionne, Melanie Gravois, Julie Henderson, Michael Kritscher, Don Lucas, Robert Mueller, \*Marty White (for Ron Madaras)

**Chairman's Comments – Jim Floyd**

- Howard Walter will be joining the Committee next month as the Computing Sciences Directorate representative. He is replacing Michael Banda, who has accepted a new assignment at the Advanced Light Source (ALS).
- The Chemical Safety Subcommittee is an outgrowth of the Health, Safety, and Security (HSS) audit of chemical inventory and labeling. Scott Taylor is chairing the subcommittee, which includes Larry McLouth, Jerry Bucher, Vince Battaglia, Rick Kelly, and Tracy Mattox.

## **Recap from Annual Meeting with Lab Director—Jim Floyd**

### **Safety Culture Discussion**

Committee members appreciated Dr. Alivisatos' awareness of and involvement in LBNL safety issues, and commented that they wish he could attend our meetings more often. Weyland Wong commented that safety culture is a big issue that needs Lab and Division management involvement, not just EHS Division. Don Lucas said that Richard DeBusk has developed a proposal for the initiative. We will have something to discuss soon. Environment, Health, and Safety Division (EHS) will be bringing 2 HSS people to LBNL on April 5<sup>th</sup> and 6<sup>th</sup> to discuss Human Performance Factors and lessons learned from other DOE sites. There will be a seminar at noon on one of the days. There will be meetings with key groups, including the Safety Advisory Committee (SAC). An email will be sent out with details. There was a general discussion of the need to define the current safety culture (which may be uneven) and the desired endpoint, and decide how to measure progress. Some of the criteria could include accident rate and knowledge of Integrated Safety Management. Messages from senior management and Division Director walkthroughs make a difference. We need to have people in work groups buying into the requirements and enforcing compliance within their groups. There are big differences in the safety knowledge between new people (postdocs, guests, etc.) and permanent employees at both the staff and supervisor levels.

There is a perception that LBNL is enforcing a compliance culture that goes beyond safety needs (such as the requirement to wear safety glasses in technical areas). John Christensen commented that the requirement for safety glasses was a change for Earth Sciences, and they received some pushback initially, but they worked with people to try to find solutions, and now wearing the safety glasses is an established habit in most areas. Don Lucas would like to re-examine the policy. The policy was put in place by Dr. Chu when it was found that people in technical areas were not making good decisions about when Personal Protective Equipment (PPE) was necessary. The PPE policy may be incorporated into the Work Planning and Control system that will be developed. If we can improve the safety culture, we can have less restrictive rules. The number of exemption requests Don Lucas has been receiving has decreased. About  $\frac{3}{4}$  of the requests are reasonable, and about  $\frac{1}{4}$  don't make sense. There is no specific milestone/deadline that we have to meet regarding safety culture. Improvement will be a continuing process of finding what works for LBNL.

Martin Pollard commented that the Joint Genome Institute (JGI) has a good safety culture program. It includes employee involvement, a safety committee, a safety fair, displays, management meeting presentations, and an enthusiastic emergency team. The system was developed during the ergonomics safety stand-down. Melanie Alexander and Richard DeBusk have been involved. An effective safety culture needs bottom-up involvement from user groups as well as top-down management leadership.

## Technical Programs and Issues

Jim Floyd asked the Division Representatives for input on which safety programs and issues are expected to have the most impact on Divisions. Following is a summary of the comments.

Issue	Divisions commenting	Concerns
Space	Earth Sciences AFRD Genomics Life Sciences Materials Sciences EHS	<p>There needs to be a process for considering safety when converting space use between labs and offices. Space is always a problem for growing programs. Some areas (Bldg. 52) are not seismically safe.</p> <p>JGI has been getting good response from their landlord on correcting safety issues, and good support from EHS.</p> <p>Subcontractors sometimes do questionable things. Movers attempt to use pushcarts and dollies to move everything. The riggers know how to move heavy equipment and work in awkward spaces.</p> <p>LBNL needs to ensure subcontractors have adequate insurance.</p> <p>A satellite EHS office may be needed in West Berkeley if a large group moves there.</p> <p>There is a lack of earthquake planning and preparedness at some off-site locations.</p>

		Facilities response was variable during move of EHS Division office from Bldg. 90 to 75.
Nanotechnology	Materials Sciences EHS	DOE ignored comments and is re-issuing the Order.
Hazardous waste	Chemical Sciences	Waste shipment process
Lockout/Tagout (LOTO)	Accelerator & Fusion Research Division (AFRD) Materials Sciences	The LOTO process makes operation of small test stands less efficient.  There should be a shorter training course for researchers.
Activity Hazards Documents (AHDs)	Nuclear Science	There should be more guidance on Integrated Safety Management and AHDs.
Ergonomics	Facilities	Ergonomics is the biggest issues at this point. Facilities is working with the EHS ergonomists.
EHS Subject Matter Experts	Engineering	The quality of support and responsiveness of EHS personnel varies.  Weyland Wong will meet with Doug Fleming to provide feedback from the Division Safety Coordinators
Electrical AHDs	Physics	The need for the requirement was not explained well. They are getting pushback from the researchers.

Action items:

- Jim Floyd will try to get Anita Gursahani to come to the next SAC meeting.
- Scott Taylor will arrange for a presentation on the approved approach to Work Planning and Control.

## **Comments from EHS Division – Don Lucas**

### **Operational Peer Review**

EHS Division will be going through a 3-day peer review in late May to look at whether the Division is organized and staffed to maximize efficiency and effectiveness. The review will be conducted by a consulting firm specializing in EHS systems and will include reviewers from the University of California, other National Labs, and other facilities. There will be more information next month. The report will go to Jim Krupnick. EHS would like to hear more from the Divisions about our needs and priorities now and with anticipated growth.

### **Access Control**

Don Lucas has been designated as the Access Control project manager. The plan is to move forward to implement the system at ALS, Property Protection Areas, and X-ray machines by June 2010. Don Lucas is collecting requests from other groups that would like to have the access control system – National Energy Research Scientific Computing (NERSC), Materials Sciences Division (MSD), etc.

One problem with the existing system is that we can't tell where card readers are located as there is no particular system to the numbering. Training, on-the-job training (OJT), and authorization will be required to access X-ray machines. Course numbers can be assigned for OJT. Scott Taylor commented that there has been a problem with the interface between the Chemical Management System and Hazardous Waste databases that prevents some people from preparing hazardous waste requisitions. We hope that there won't be similar problems between the Training and Access systems. Sometimes there is a delay in synchronizing updates. We need to define how the process should work and map the needs. The system is flexible, adaptable, and not hardware-dependent.

Access control is being considered for areas where access must be restricted to comply with radiation safety rules, and for areas requiring site-specific courses. "Tailgating" could be a problem in some areas. At another light source, an unauthorized person was able to go through 3 levels of access control to damage some crystals. LBNL has funded installation of 80 card readers for high-hazard radiation areas. Next year, we will work on lower hazard areas.

There were three drivers to implementing access control: Radiation Safety Committee recommendations, a Corrective Action Plan item to address radiation safety issues, and an agreement with DOE to control access to high-hazard areas. There are some remaining questions about how high-hazard areas are defined, what hazards other than radiation should have access controls, and how to manage multi-purpose rooms. Compliance with requirements, safety needs, and costs must all be considered. SAC can help EHS define requirements and priorities. Don Lucas will also be discussing the

program at the Radiation Safety Committee meeting on April 22. He also wants feedback from DOE.

The SAC may need a larger subcommittee to look at space and access control issues. Jim Floyd will ask Helen Cademartori to help form the subcommittee.

### **SAC ES&H Peer Review – Jim Floyd**

The pilot will be conducted for Materials Sciences Division. The scope will include supervisor span of control, supervisor/work lead relationships, and orientation of new staff. The review committee includes Ken Downing (LSD), Jim Floyd and Mike Martin (ALS), and Scott Robinson (OCA). They will look at work on the Hill, including the Molecular Foundry, and campus labs. They will conduct work observations and interviews, using broad, HSS-style questions. The reviewers will divide into two teams to visit more work groups. They are planning to finish the fieldwork by the end of April. The Division Director or Deputy will be asked to respond to any findings, and present a follow-up on effectiveness of implementation. We need to conduct one more Peer Review this year. The Division to be reviewed has not been announced.

### **Emergency Management – Rocky Saunders**

DOE Order 151.1(c) will have a big impact on security and emergency operations. There was a review and LBNL is working on corrective actions. There will be a new training requirement. The Order also applies to radiation and biomaterials. Chemical storage limits are based on weight, not concentration. Any amounts over the limits should be flagged by Procurement when they are ordered. A person is being hired to work on the documentation. There are 18 criteria in the Order. It applies offsite as well as onsite. The Order requires emergency response planning for areas that store chemicals above the limits. An example would be the plating shop, which has the potential for a nitric acid release. We need to understand the requirements and responsibilities. The requirements can be triggered when larger quantities of chemicals are brought in for short-term processes.

The Order was inserted into the LBNL contract about a year and a half ago. Emergency Services would like to establish an ongoing relationship with the SAC. Emergency Services' function is to prepare for, respond to, recover from, and mitigate the impacts of emergency events. They develop and maintain the Master Emergency Program Plan, develop emergency response procedures, provide training, and conduct exercises and drills. Their priorities are to protect life, the environment, and property.

LBNL has a responsibility to declare and report Operational Emergencies promptly. An Operational Emergency is a safety issue that affects DOE buildings/activities, may cause serious health impacts, requires outside assistance, and requires time-urgent notifications. A "mass casualty" is an event with 3 or more victims.

There is an annual screening of hazardous materials stored at LBNL. This includes a survey of significant changes and queries of the Chemical Management System, Shoebox and RADAR databases. The thresholds are:

- Category 3 radioactive materials;
- Chemicals with an National Fire Protection Association (NFPA) hazard rating of 3 or 4, in dispersible form, greater than 40 lbs (solid), 5 gallons (liquid), or 10 lbs. (gas, assuming a 30 lb. cylinder);
- Bioselect agents;
- Nanomaterials (criteria not defined yet).

There are five implementation guides, over 600 pages total, written by different contractors. The chemical quantities are per container, and up to 10 containers of the maximum size are allowed per location. If a threshold is triggered, an Emergency Planning Hazard Assessment (EPHA) must be written. Alpha Track is the consulting firm that will develop the assessments for LBNL. Each assessment would cost about \$30K. It has not been decided who pays for the assessment. The goal is to stay below the thresholds by removing materials, reducing quantities, or substituting lower hazard chemicals where possible. There are EPHAs for the plating shop and the bio lab. An EPHA was avoided for 70A by developing a plan to reduce the amount of SO<sub>2</sub> from 150 lbs. to <10 lbs. by June 30.

The thresholds are specified in the Order and do not always make sense. They were intended to reflect the quantities that a person could easily handle. Household chemicals are exempted, regardless of hazard. Handling gases in smaller cylinders may actually be more hazardous because the greatest risk of release is when the cylinders are transported and regulators changed.

Accuracy of information in our databases is critical to ensure compliance. A larger issue is how to anticipate and plan for increases in materials. There is a system in place to flag purchases; however, it does not always work. Policies and procedures need to be developed, PUB-3000 needs to be revised, and the Building Manager and Emergency Team policies need to be updated.

The meeting was adjourned at 12:00 PM

Respectfully submitted, Patricia M. Thomas, SAC Secretary