

Safety Advisory Committee

March 7, 2014

1:30 – 3:00 PM

Minutes

Committee Member	Representing	Present
V. Potapenko, M. O. Leimer	Human Resources Advisors	X
Blodgett, Paul M.	Environment, Health and Safety Division	
Bluhm, Hendrik	Chemical Sciences Division	X
Buonsanti, Raffaella	Materials Sciences Division	
Christensen, John N.	Earth Sciences Division	X
Dardin, Steve	Physics Division	
Franaszek, Stephen	Genomics Division	X
Fujikawa, Brian	Nuclear Science Division	
Giuntoli, Patricia	Computing Sciences Directorate	X
<i>vacant</i>	Environmental Energy Technologies Division	
Martin, Michael C.	Advanced Light Source Division	
Sauter, Nicholas	Physical Biosciences Division	X
Seidl, Peter	Accelerator & Fusion Research Division; SAC Chair	X
Taylor, Scott E.	Life Sciences Division	X
Tomaselli, Ann	Information Technology Division	X
Tucker, Eugene	Facilities Division	X
Thomas, Patricia M.	Safety Advisory Committee Secretary	X
Wong, Weyland	Engineering Division	X

Others Present: Kim Abbott, Jim Floyd, Melanie Gravois, Mike Kritscher, Quang Le, Betsy MacGowan, Bob Mueller, Tonya Petty, Kem Robinson, Mike Ruggieri, Jack Salazar, Henrik von der Lippe, Bill Wells, Aaron Ward, Marty White, Mike Wisherop, Lydia Young

Comments from the Chair – Peter Seidl

The Engineering Division Peer Review was the conclusion of the pilot project. Jim Floyd and Peter Seidl are waiting to get on Paul Alivisatos' schedule to discuss the outcome of the pilot project. At today's meeting, Kem Robinson will be providing feedback on Engineering Division's impressions of the Peer Review process as well as the Division's response to the review.

Engineering Division Peer Review Response – Kem Robinson

Engineering Division preferred the Peer Review process to the previous MESH Review process because the Division management was able to direct the focus of the review to topics they were interested in, and to coordinate the Peer Review with their Division Self-Assessment. Kem Robinson requested that the Peer Review focus on two topics – the implementation of Integrated Safety Management Core Function 2, Identify Hazards, and the Division's implementation of institutional ES&H responsibilities.

Engineering Division is responding to the review recommendations regarding hazard identification through enhancement of work planning and control systems. They have enhanced communications, developed memoranda of understanding for matrixed personnel, and will be rolling out the new Work Planning and Controls database system. Matrixed Engineering Division employees are exposed to most of the hazards at LBNL through their work with other divisions. The Peer Review team met with a cross-section of people. Engineering Division is developing a process guide that is structured like the Requirements and Policies Manual. The guide will include uniform practices, lessons learned, safety news, and other information. They have established a safety coordination council of technical supervisors to coordinate common methods.

There was a question about how supervisors evaluate matrixed people. At LLNL, the host organization takes safety responsibility for matrixed people. At LBNL, Engineering Division takes responsibility when Engineering employees are involved in an incident. Employees need to know they have the backing of their home division to feel confident that they can stop unsafe work without retaliation. Focus group discussions with a third-party moderator revealed concerns that Engineering employees' stop work requests could be over-ridden by researchers. The Work Planning and Control system will require Engineering supervisors to receive notification and approve of their employees' work assignments.

The review of implementation of institutional systems focused on electrical safety, pressure vessels, and lifting fixtures.

The Engineering Division Director has been the Authority Having Jurisdiction (AHJ) for scientific electrical equipment. The AHJ responsibility is being delegated to Henrik von der Lippe, who will also be the Engineering Division SAC Representative. Kem Robinson will be a voting member of the Electrical Safety Advisory Board. The need for an electrical safety design guide was identified. The North Carolina State and LLNL guides are being used as models and updated to create an LBNL guide. It will be available on-line in a few months. The electrical engineering staff has been involved in the development of the guide. There will be training across the Division.

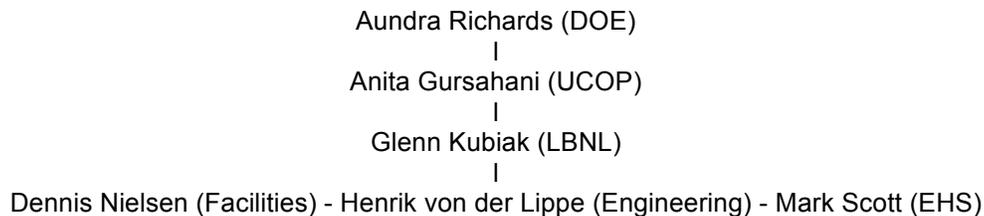
LBNL's approach to pressure vessels has changed. In the past, pressure vessels were usually designed and fabricated in-house. Now, pressure vessels are typically assembled from certified components. It is important to take a systems-level approach and not assume that the overall system is safe for the intended use because the individual components were certified.

In summary, the Peer Review provided added value because it was coordinated with issues the Engineering Division was exploring through self-assessment.

Electrical Safety Program Status – Bob Mueller

The electrical shock incident on November 19, 2013, involving a construction contract worker at the General Purpose Lab was once of the worst in recent years. The worker made contact with a live circuit that was not controlled by the group LOTO. The “test before touch” rule was not used. The incident was not reported until the next day. The contributing circumstances included premature energization of a building under construction, not enough Qualified Electrical Workers on the project, and inadequate safety assurance.

The incident resulted in an assessment of electrical safety and the Authority Having Jurisdiction (AHJ) system at LBNL in December 2013. The Department of Energy has delegated AHJ responsibility to LBNL, and expects us to enforce the electrical codes. The AHJ responsibility has been divided between the Engineering Division Director (research equipment), Facilities Division Director (infrastructure), and EHS Electrical Safety Officer (work practices). The assessment found the research equipment program to be effective, the Facilities infrastructure program to be not effective, and the EHS work practices program to be marginally effective. One issue identified was that there was no separation between the program management responsibility and the AHJ responsibility. AHJs must be independent of construction or research project scope and budget, and be able to demonstrate compliance. The new AHJ structure is:



For construction projects, it was found that construction contractors were considering the safety inspectors' findings to be optional "advice" rather than requirements that must be followed. The Flexlab and General Purpose Labs are being re-inspected. LBNL is now requiring that construction contractor electricians be Qualified Electrical Workers. This requirement may be extended to vendors working under Subcontractor Job Hazards Analyses. LBNL EHS is briefing subcontractor foremen on NFPA 70E requirements. We are increasing the formality of inspections with references to the applicable standards.

The re-write of the Electrical Safety program chapter is being delayed while LBNL responds to the assessment findings. Mark Scott, John Chernowski, and Theresa Triplett are developing an integrated Corrective Action Plan that includes lessons learned from other significant electrical safety events. There will be a Health, Safety, and Security (HSS) assessment of mitigation measures on April 30.

An Electrical Safety Advisory Board has been formed. Glenn Kubiak is the Chair of the Advisory Board. Bob Mueller represents the researchers indirectly through his role as Chair of the Electrical Safety Subcommittee. There was a suggestion that Bill Wells should be included, to interpret the implementation of requirements through the Subcontractor JHA system.

Power Outage Incident Timeline – Gene Tucker

On February 17, a 12-kV, 3-phase switch near the ATM kiosk failed, resulting in power failures and significant disruption of operations in some LBNL areas. Gene Tucker prepared a summary of the sequence of events:

Monday 2/17/14 (President’s Day Holiday)	
11:15	12kV 3-phase switch located near the Lab's ATM kiosk failed
	Power lost / breakers tripped Buildings 23, 50, 54, 67, 70, 70A
	Power dropped in Building 2 and most of hill
12:34	Incident Notification
15:18	EHS notified by ALS
16:00	Partial power restored to Buildings 50, 70A (receptacles only)
16:30	Power restored to Building 23
Tuesday 2/18/14	
10:00	Facilities meeting to assess and manage incident
	Facilities informed EHS of pending ORPS
11:30	Decision made to close Buildings 50, 70, 70A, Café
14:56	Facilities officially declared ORPS
16:20	Level 1 announcement: Café Closed
19:18	Level 1 announcement from Glenn Kubiak

Wednesday 2/19/14

10:00	Additional situational and needs assessment
	Generator running at B54
	Failure Analysis commenced

Thursday 2/20/14

07:00	Work planning / Permits Repairs began by Rosendin Electric
10:00	Reviewed ePower needs with stakeholders
	Material and work orders issued
15:00	Presented schedule to stakeholders
	Reviewed list of equipment that needed e-power
	Discussed procedures for shut down on Friday
	Discuss procedures/schedule to monitor labs during outage
	Discuss procedures/schedule for restart
	Developed Communication Plan

Friday 2/21/14

17:00	Power shut down to B70, 70A, 50 (ePower on)
	Repairs commenced

Saturday 2/22/14

06:00	Damaged cable replaced and terminated
	B50 energized ?

Sunday 2/23/14

06:00	Complete cable terminations
10:00	Failure Analysis continues
14:00	Energize pad gear

Monday 2/24/14

12:00	Power restored to 70, 70A
	Cable removal initiated

Tuesday 2/25/14

15:00	Power restored to 54
-------	----------------------

The extent of impacts and lessons learned from the incident are still being analyzed and it is anticipated that there will be further discussion at the April SAC meeting. Emerson is performing a failure analysis. LBNL has several similar switches. The maintenance cycle and availability of back-up generators and transformers is being studied. The Continuity of Operations Plans were useful in prioritizing response to the incident.

Protective Services – Aaron Ward, Geoffrey Aus

The Protective Services Department was created in April 2013. It reports to Glenn Kubiak. The Department is responsible for Security, Emergency Management, and Fire Protection. They plan to have a new, improved website available soon. Allen Benitez is the Department Head. Aaron Ward is the Deputy. Brian Strock is the Security Manager. Aaron Ward introduced Tonya Petty, the new Emergency Manager. Tonya Petty comes to us with experience from Argonne National Laboratory and the Pantex nuclear facility. Aaron Ward also introduced Geoffrey Aus, the LBNL Fire Marshall. Geoffrey Aus has over 30 years of fire safety experience and is available at the Fire House almost every day. He welcomes face-to-face visits to answer questions.

Geoffrey Aus provided an update on the status of the Fire Safety Corrective Action Plan. There is also a Project Management Plan, developed by Project Manager Lydia Young, to define roles and responsibilities and manage change. The corrective actions are focused on requirements, people, and physical infrastructure. LBNL requirements are driven by National Fire Protection Association, California Fire Code, and Department of Energy requirements. The Fire Department is conducting Fire Protection Assessments and Fire Hazards Analyses, and striving to improve communications with the affected Divisions and Building Managers. We are expecting a DOE audit of our fire protection programs in a year or two.

Proposed April Agenda Items

- Nuclear Science Division Peer Review Response (James Symons and Rod Clark)
- Power Outage Lessons Learned

The meeting was adjourned at 3:00 PM

Respectfully submitted, Patricia M. Thomas, SAC Secretary