



MSD Materials Sciences Division

Safety Committee Meeting

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U.S. DEPARTMENT OF
ENERGY

Office of
Science

Agenda

1. Intro/MSD EH&S 10 minutes
2. WPC Effectiveness Survey 5 minutes
3. MSD Incident summary 5 minutes
4. Directory of LBL Scientists... 10 minutes
5. L-T-A Implementation of Radiation Protection Program Procedures 30 minutes
6. After an Incident 5 minutes
7. Door Signs – Accurate Info? 5 minutes

MSD Incidents since last meeting

- Incidents and lessons learned since last meeting
 - Finger punctured with syringe – work process, schedule pressure
 - Finger cut by material – work focus, material sizing
 - Repetitive motion injury at ALS – Increased workload, placement of work
 - Missing/wrong laser door signs – Communication of requirements

Directory of LBL Scientists for Targeted Help with Lab Safety Hazards – Kurt Van Allsburg



A new resource for knowledge sharing

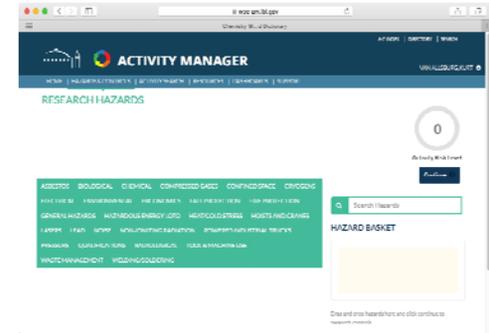
Working scientists willing to share expertise



“Scientific Safety & Collaboration Directory”



WPC Activity Manager



Master directory:

- Created by Chem Safety Liaison (me)
- Updated by Laboratory Safety Specialist

New info in WPC AM:

- Expert contacts for key hazards
- Prompts to select a hazard “consultant” or “peer reviewer”

Background on Knowledge Sharing Project

- Scientists have asked for more “safety peer review”
 - Reactive Chemicals Safety Forum 11/18/15
 - Scientists tend to trust other scientists
 - New staff don't have robust peer-to-peer networks for planning
 - LBL's org structure can be hard to navigate

Doesn't WPC-AM already have "peer review"?

The screenshot shows a web browser window with the URL `wpc-am.qa.lbl.gov`. The page title is "Chemistry Gl...d Dictionary". The main header features the "ACTIVITY MANAGER - QA" logo and navigation links: "HOME", "HAZARDS & CONTROLS", "ACTIVITY SEARCH", "RESOURCES", "DASHBOARDS", and "SUPPORT". A user profile for "VAN ALLSBURG, KURT" is visible in the top right.

The main content area is titled "CREATE ACTIVITY: DESCRIPTION OF WORK" and includes the activity ID "EH-0232 - HAZARDOUS CHEMICAL SYNTHESSES IN GLASSWARE" and the status "ACTIVITY STATUS: DEVELOPING". A circular gauge on the right indicates an "Activity Risk Level" of 0.

A progress bar at the top shows five steps: 1. Description, 2. Define Work (current step), 3. Select Hazards, 4. Review Hazards, and 5. Review Controls. Below the progress bar are buttons for "Preview", "Choose An Action", and "Save".

Two tabs are visible: "Description of Work" (active) and "Collaboration". Under the "Description of Work" tab, there is a section for "Assign Contributors" with a search input field labeled "Assign Contributor" and an "Add Contributor" button. Below this is a "CONTRIBUTORS" section with a "NAME" dropdown menu and a message box stating "There are no contributors."

Background on Knowledge Sharing Project

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 - Reactive Chemicals Safety Forum 11/18/15
 - Scientists tend to trust other scientists
 - New staff don't have robust peer-to-peer networks for planning
 - LBL's org structure can be hard to navigate
- Doesn't WPC-AM already have “peer review”?
 - Researchers using the “contributor” function this way are in the minority
- Recent safety incidents
 - New PI's and postdocs often initiating work outside expertise
 - Low barrier to entry important

What would this directory look like?

Number of covered hazards: ~ 50

Example entry in “Pyrophorics” section

Name: Kurt Van Allsburg

Info: Kurt is a coordination and materials chemist in JCAP and CSD. He is studying catalysts for water oxidation and artificial photosynthesis. He has experience with organic and inorganic synthesis, air-reactives, nanomaterials, pressurized glassware (e.g. Schlenk ware), and related spectroscopies. Send him an email with requests for help.

Email: kurt@lbl.gov

Phone: x5555

Keywords: National Laboratory, LANS, Materials Sciences Division, organic synthesis, air-sensitive, pressure

L-T-A Implementation of Radiation Protection Program Procedures

– Quang Le and Robert Fairchild



Radiation Safety Update: Spring 2016

Corrective Action Plan

Introduction

- Since late 2013 there have been a number of radiological events at the Laboratory.
- Nobody has been injured, exposed above thresholds, and no radioactivity was taken off-site, but these events have occurred across Divisions.
- A causal analysis team reviewed these occurrences. **The next step is to devise a corrective action plan to address common themes.**
- As part of the review of the draft corrective action plan, the CAP committee and RPG are engaged in **outreach through the Division Safety Committee meetings.**

Investigation overview

- Main areas of concern:
 - PIs may not understand that the RWA/XA is a safety envelope which defines only the specific tasks that can be performed.
 - Workers do not always recognize a change in work scope.
 - Workers do not understand that a change should be re-evaluated.
 - Transfer of PI responsibilities contributes to failures in communication, work practices and compliance.
 - Some (new) PIs do not understand their role or responsibilities.

Common Area 1

- **Principal Investigators** (“Owners” of and RWA/XA/or WPC activity involving radiological work) and their supervisors may not understand that **the RWA/XA is a safety envelope which defines only the specific tasks that can be performed.**
- This lack of understanding contributes to issues regarding:
 - Change management
 - Insufficient PI oversight
 - Work planning and control
 - Work authorization
 - Use of work authorizations merely for inventory control of rad material

Common Area 1

- 1.1 RPG will develop and implement **a PI training and qualification process** that addresses a PI's roles, responsibilities, authority and accountability for implementing requirements of their radiological work authorizations.
- **On-line training classes** (not more than 2 hours) will be developed:
 - 1) radiation generating devices (e.g. accelerators, X-ray sources)
 - 2) unsealed sources
- A **practical demonstration of OJT** for each PI's radiological work authorization will be completed with a Health Physicist as part of the PI qualification process.
- Current radiological work **PI's will need to complete the online course and OJT for their radiological work authorization prior to the initial renewal** of their radiological work authorization.

Common Area 1

- 1.1 The classes will reinforce the following:
 - **Your authorization is an envelope**
 - **How to identify a change**
 - **How to recognize when a change requires an amendment before work proceeds**
 - **Practical conduct of work specific to the authorization**
- Updates will be made to the language above the PI signature to ensure that the authorization is aligned with the PI's scope of work, expertise, oversight authority and capacity.
- Updates will also be made to the language above the Division management signature to validate the PI qualification.

Who will be directly impacted by this step in the corrective action plan?

- ✓ **Radiation Work Authorization PI's** (whether RWA or in WPC)
- ✓ **PI designees** – strongly encouraged category!
- ✓ **Division Director or Designee** (new “teeth” in the signature step for line management)
- ✓ **Any new PI or PI taking over an existing radiological work authorization**

An interim step:

Automated electronic PI survey (suggested as quarterly)

Purpose: to strengthen awareness of authorization responsibilities and proper implementation

A few YES/NO questions targeted at upcoming changes in work scope or personnel.

Generated by RADAR. **Responses addressed by RPG with the PI.**

Common Area 2:

Workers do not always recognize a change (in work scope, process, or configuration management) and do not understand that a change should be evaluated against the radiological work authorization (RWA or WPC activity).

Same emphasis as Common Area 1, but now for all individuals involved in radiological work.

Common Area 2:

Implementation plan:

RPG will add the change management training module developed for the PI qualification class to EHS 471 (Rad Worker I) and 475 (X-ray awareness).

New training module requires understanding that:

Your work authorization is an “envelope”

How to identify a change

When does a change require an amendment before work proceeds

Who will be affected by this?

All individuals who are required to complete Rad Worker I (EHS 471) and/or

X-ray awareness training (EHS 475)

Timeline depends on EH&S priority and requires RPG to complete the development of this module.

Will be implemented in the next renewal cycle for EHS 471 or 475, or ASAP for new rad workers.

Common Area 2

Add a requirement to each radiological work activity that **provides a change management approach to help workers identify a change**, re-examine hazards, and if needed, modify the work authorization before commencing work.

Who is affected: **PI (or activity lead, as required) to indicate how they will implement** (checklist, lab meeting reviews, other)

Implementation expected at the time of the next radiological work authorization renewal. Will involve both the PI's and the HP's to complete this action.

Common Area 2

Interim compensatory action:

Inquire (via the electronic questionnaire going to radiological work PI's) whether they have **reviewed the scope** of the authorization with the workers on that authorization.

Who is affected: **PI (or activity lead) authorized rad workers.**

Common Area 3

The **transfer of RWA responsibilities due to a change in PI oversight** leads to failures in communication, work practices and compliance.

The transfer does not include a validation of the new PI's understanding of his/her role, responsibility and accountability for the RWA.

Common Area 3

To be addressed by:

Encouraging the inclusion of “PI designee(s)” on radiological work authorizations.

Development of the PI qualification training. Will be required of any new PI or PI designee.

Updating the signature statement for the PI and the Division management on the affected rad work authorization to ensure alignment with PI’s scope of work, oversight authority and capacity.

Common Area 3

Process improvement:

RPG should **develop and implement objective testing criteria for the Rad Worker 2 exam.**

Rad Workers will need to complete the practical exam with 100% passing grade.

Who is affected: RPG to develop the testing criteria and provide a documented process to address failures. **Current Workers to complete upon renewal of RWII, new workers as they are added to authorizations.**

Common Area 4

The decision to **establish a contamination area (CA) or a Designated Work area (DWA)** for a radiological work authorization is based on risk exposure and implicit risk acceptance, **without defined standards for risk acceptance**. This decision may result in a non-compliant situation.

Common Area 4

RPG will limit the use of DWA's. **For dispersible material amounts above appendix D limits (in 10CFR835) a Contamination Area will be the default posting.**

To use a DWA designation, a specific acknowledgement of risk acceptance will be obtained from the PI of that radiological work authorization.

At the next authorization renewal, modify as needed the radiological hazard review to include documented justification for alternative postings.

The role of the Radiation Safety Committee

- **Larry Phair (NSD), Chair**
- **Amy Kronenberg (BSE)**
- **Michael Banda (ALS)**
- **Warren Byrne (ATAP)**
- **Bob Cronin (FAC)**
- **Jeff Kortright (MSD)**
- **David Kestell (EHS) RadCon Manager**
- **Jim O'Neil (MBIB)**
- **Henrik Scheller (BSE)**
- **David Shuh (CSD)**
- **Csaba Toth (ATAP)**
- **John Christensen (ESD), SAC Liaison**
- **Marty White (NSD, PH), DSC Liaison**

Questions from the floor

What to do after an incident

- New MSD Policy
- Ensure your own safety
- Help others if safe to do so
- Use a fire extinguisher if you are trained, and comfortable doing so
- Turn off hazardous energy sources if safe to do so
- Follow emergency guide (wall chart)
 - 911?
- Leave the scene as it is
- Contact your EH&S technician (or me)
 - Office and mobile numbers on door sign

Door signs – Accurate?

- Recent inspection findings
 - Missing signs
 - Inaccurate signs
- Names correct?
- Hazards correct?
- Controls correct?
 - Wet labs require safety glasses, long pants and closed-toed shoes
 - Other technical areas may have “task-based” PPE requirements

MSD Activity Manager Effectiveness Survey

I am a worker assigned to an MSD Activity (answer questions in section A)

I am a WPC Activity Lead (answer questions in section A and B)

A. Questions for workers:

1. Who are your Activity Lead(s)?
2. When would you contact your Activity Lead(s)?
3. Do you know the scope(s) of your activity(s)?
4. What is required to perform work outside of your activity(s) scope(s)? Or, at what point would you contact your activity lead when trying something new?

B. Questions for Activity Leads:

1. What are your roles and responsibilities as an Activity Lead?
2. How do you interact with workers under your activities to ensure they are qualified to perform work safely?
3. How do you decide when a new activity is needed?
4. What skills, knowledge or experience do you believe authorizes or qualifies you as an Activity Lead?
5. Do you have the needed authority and support to meet the roles and responsibilities of an Activity Lead?

6. Do you have the necessary time to perform the duties of an Activity Lead?

7. What are the most significant challenges you face as an Activity Lead?

8. What additional tools or support do you need to exercise your responsibilities as ALs?

9. In what ways is Activity Manager a useful tool in ensuring a safe work area?

10. How does Activity Manager help you identify hazards and controls needed for a safe work area?