Worker Gets Hydrogen Peroxide in Eye

Purpose
To share “lessons learned” gained from incident investigations through a small group discussion method format.

To understand “lessons learned” through a Systems of Safety viewpoint.

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Lessons Learned
Volume 10, Issue 35
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Background Information

Before beginning this Lessons Learned, please review this and the next page which contain information that will introduce the concepts of Lessons Learned and Systems of Safety.

Creating a safe and healthy workplace requires a never ending search for hazards that sometimes are not obvious to us. These hazards exist in every workplace and can be found by using various methods. Lessons Learned are just as the name suggests: learning from incidents to prevent the same or similar incidents from happening again.

**Systems Are Not Created Equal:** Not equal in protection and not equal in prevention.

Using our Systems Focus to uncover system flaws or root causes is only one part of controlling hazards. We also need to look at the systems involved to decide on the best way to deal with the problem. The most effective way to control a hazard is close to its source. The least effective is usually at the level of the person being exposed. The system of safety in which the flaw is identified is not necessarily the system in which you would attempt to correct the flaw.
### Lessons Learned

**Worker Gets Hydrogen Peroxide in Eye**

<table>
<thead>
<tr>
<th>Major Safety System</th>
<th>Design &amp; Engineering</th>
<th>Maintenance &amp; Inspection</th>
<th>Mitigation Devices</th>
<th>Warning Devices</th>
<th>Training &amp; Procedures</th>
<th>Personal Protective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Prevention</td>
<td>Highest—the first line of defense</td>
<td>Middle—the second line of defense</td>
<td></td>
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<td></td>
<td>Lowest—the last line of defense</td>
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<tr>
<td>Effectiveness</td>
<td>Most Effective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Least Effective</td>
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<tr>
<td>Goal</td>
<td>To eliminate hazards</td>
<td>To further minimize and control hazards</td>
<td></td>
<td></td>
<td></td>
<td>To protect when higher level systems fail</td>
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</tbody>
</table>

#### EXAMPLES OF SAFETY SUB-SYSTEMS**

**Technical**
- Design and Engineering of Equipment, Processes and Software
- Management of Change (MOC)**
- Chemical Selection and Substitution
- Safe Siting
- Work Environment **HF**

**Organizational (must address a root cause)**
- Staffing **HF**
- Skills and Qualifications **HF**
- Management of Personnel Change (MOPC)
- Work Organization and Scheduling **HF**
- Work Load
- Allocation of Resources
- Buddy System
- Codes, Standards, and Policies**

**HF** - Indicates that this subsystem is often included in a category called Human Factors.

* There may be additional subsystems that are not included in this chart. Also, in the workplace many subsystems are interrelated. It may not always be clear that an issue belongs to one subsystem rather than another.

** The Codes, Standards and Policies and Management of Change subsystems listed here are related to Design and Engineering. These subsystems may also be relevant to other systems; for example, Mitigation Devices. When these subsystems relate to systems other than Design and Engineering, they should be considered as part of those other systems, not Design and Engineering.

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Lessons Learned Statement

Working in a dusty and inadequately ventilated environment, combined with the improper storage of first aid materials, led to a worker getting hydrogen peroxide in his eye. Systems of Safety are utilized to prevent this type of incident.

Although the area was known to be dusty with glass fibers, no effort had been taken within the Mitigation Devices System of Safety to install a dust removal and containment system that would reduce or eliminate the glass fiber dust particles. A good system would lessen the number of incidents when workers need to flush eyes or clean contact lenses with eyewash solution.

Although workers may have known the bottles of eyewash solution and hydrogen peroxide were similar in both shape and color, action should have been taken in the Design and Engineering System of Safety to prevent the use of one in place of the other. Because workers often get dust in their eyes and need to flush them, installation of a permanent eyewash station would eliminate the use of disposable eyewash (Design and Engineering System of Safety).
Discussion

While baling glass fibers, a worker felt an irritant in his right eye. He was wearing contacts under safety glasses. Upon feeling discomfort in the eye, the worker went to the restroom, removed the contact lens and rinsed the contact lens with a bottle of solution that appeared to be eye wash. Because the area was so dusty and workers frequently got dust particles in their eyes, it was a common practice for workers to re-use bottles of eyewash stored in the nearest restroom. The worker put the contact lens back into his eye and experienced slight burning. The solution used was actually hydrogen peroxide. Upon realizing the mistake, he rinsed his eye and contact lens. His eye seemed to be alright.

The old-style, brown bottles of hydrogen peroxide had recently been replaced by a new-style bottle that was almost identical, in both shape and color, to the bottles of eye wash. The bottle of hydrogen peroxide was being stored in the bathroom where the eyewash solution is commonly stored. The hydrogen peroxide was usually stored in the first aid cabinet.
Analysis

The Logic Tree is a pictorial representation of a logical process that maps an incident from its occurrence, “the event,” to facts of the incident and the incident’s root causes.

Event
Worker experienced slight burning in eye

Worker used hydrogen peroxide to rinse contact lenses

Eye was irritated

Worker had glass fiber dust in eye

Baling area was dusty

S.O.S. Failure Design and Engineering (Safe Siting)

Peroxide bottles and eye wash bottles similar in shape and color

Hydrogen peroxide stored in the same place as the eyewash

S.O.S. Failure Design and Engineering (Safe Siting)

S.O.S. Failure Mitigation Devices
**Recommended Actions**

1. Install a dust removal and containment equipment system for the glass fiber dust in the baling area.

2. Use different color and style bottles to eliminate confusion.

3. One-time-use supplies, such as eyewash, should be discarded after each use.

4. Install a permanent eyewash station.
**Education Exercise**

Working in your groups and using the Lessons Learned Statement, Discussion, Analysis and Recommended Actions, answer the two questions below. Your facilitator will give each group an opportunity to share answers with the large group.

1. Give examples of ways to apply the Lessons Learned Statement at your workplace.

2. Of the examples you generated from Question 1, which will you pursue in your workplace? *(Note: When we say something you may pursue, we mean a joint labor-management activity or a union activity rather than an activity carried out by you as an individual.)*
Trainer’s Lessons Learned Success Inventory

Following a Lessons Learned (LL) session, the trainer who led the LL should complete this form. This information will: 1) Help you reflect on the successes and challenges of the session; 2) Help USW with new curriculum development; and 3) Help USW as a whole better understand how the LL Program is supporting their workers.

By reviewing LL from different sites or from other areas of their workplaces, workers are able to analyze the information and apply these lessons to their own workplaces in order to make their workplaces healthier and safer.

1. Site name (if there are participants from more than one site, please list all).

_______________________________________________________________

2. Date of LL training ____________________________

3. LL number used in today’s Training_____________________

4. Your name___________________________________________

5. Summary of Education Question 1: Please summarize participants’ examples of ways to apply this LL Statement to their workplace.

Please continue on reverse side.
6. **Summary of Education Question 2:** Please summarize actions or recommendations participants discussed pursuing at their workplace(s).

Thank you for completing this form.
Lessons Learned:  Worker Gets Hydrogen Peroxide in Eye

Please answer the two questions below:

1. How important is this lessons learned to you and your workplace? (Circle one.) Rate on a scale of 1 to 5, with 5 being the most important.

   1   2   3   4   5

2. What suggestions would you make to improve this Lessons Learned?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
End of Training Trainer’s Instructions

Please complete the information below.

Trainer’s Name _____________________________________________
(Please Print)

Date of training: __________________________

No. of Participants: Total _______ Hourly _______ Management ______

Location of Training: __________________________________________

USW Local # _________________

Send:

1. This page;
2. The Education Exercise (page 8);
3. The Trainer’s LL Success Inventory form (pages 9 and 10);
4. The evaluation for each participant (page 11); and
5. The Sign-in sheet (page 13) to:

<table>
<thead>
<tr>
<th>If you are a TOP Site (excluding DOE TOP Sites)</th>
<th>Send to:</th>
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<tr>
<td></td>
<td>Steve Cable</td>
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<tr>
<td></td>
<td>2915 Gradient Drive</td>
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<tr>
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<td>St. Louis, MO 63125</td>
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<th>All other sites (including DOE TOP Sites)</th>
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<tr>
<td></td>
<td>United Steelworkers</td>
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<td></td>
<td>3340 Perimeter Hill Drive</td>
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<td>Nashville, TN 37211</td>
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Thank you for facilitating the sharing of this Lesson Learned with your coworkers.
SIGN-IN SHEET  
(Please print clearly.)

Class Title: ____________________  Class Completion Date: ________

Location (City, State)/Facility: ________________________________

Grant Program: ____________________  Dist. & LU #: ________________

Instructors: 1) ____________________  2) ____________________

3) ____________________  4) ____________________  5) ________________

Name (print first and last)  

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