Accidents and Accident investigations: An accident happens, what do we do?

1. Get the person first aid or to a hospital (of course).
2. Deal with the existing hazards (like PUT THE FIRE OUT) but disturb the scene as little as possible, in case you want experts to look over the area.
3. If possible cordon off the area until the investigation is complete. If possible, photograph everything immediately after the accident.
4. Notify any authorities or insurance companies.
5. Appropriate parties should prepare the accident report and report the accident through channels already established.
6. Draw up a list of everyone who has been in the area or has touched that machine or process (both before and during the shutdown) for questioning. Include operators, engineers, maintenance workers, contractor workers, and even janitorial personnel.
7. Conduct interviews with the people listed. Be patient in interviewing. Let people tell the story of what happened in their own way at their own pace and tell the story their own way. Avoid the look, sound and feel of any kind of police investigation. One goal is to construct a chronology starting well before the event.
8. Gather all relevant information about the accident. This should include drawings of the machine, piping or area, witness statements, medical reports on the condition of the people (if this is allowed), outside expert reports (such as metallurgy), diagrams or photos, physical evidence, logs before the accident, work orders, job packages, company and insurance company investigation reports, and shutdown records for the job.
9. **Do not investigate to affix blame**. Investigate with the intent of finding out what happened. Blame will shut people down since they might not want to get someone into trouble. Trevor Kletz stresses there is enough blame for everyone in a typical accident from the craftsperson that took a short cut, to a designer that made the short cut necessary to the operations chief that wouldn't make time for proper

training, to the CFO that would not spend the extra money for a proper isolation system.

10. Gather all cost data. This should include repair and downtime costs. Include non-financial cost such as accident costs.
11. Accidents have causes at many different levels. Close examination might show procedure lapses, poor management decisions, ignorance of parameters and a final unthinking act. All are in the chain of causes for the accident. Use the data to find out what your causes are and how you can remove them. Follow the chain wherever it leads.
12. The focus of the entire investigation is on the question **what we can do to prevent this type of accident in the future**.

All accidents are caused by many interconnected factors. The factors extend all the way up to the top of the organization (who chose to save money by eliminating …), to the lowest level (who took a short cut by …). Some people in the safety field believe that the word accident is inaccurate because it indicates that the event was out of human control. In fact, accidents are preventable and more than that they are preventable at many levels by many of the people up the chain of the organization.

Every shutdown (and plant for that matter) needs a standing safety committee. The concept and organization of the safety committee is important. The mission of the safety committee is to determine what can be done to prevent this kind of event from happening in the future, in every other plant with this hazard. The second mission is to make sure everyone knows what happened and what the company is going to do to prevent it in the future. They also look into determining the way company policy can be modified to prevent similar accidents in the future, protect the worker's rights, and to involve more of the organization in the safety program. It is not a passive job the safety committee members are also safety cheerleaders too.

Safety Committee members could include management, engineers, workers from the craft or from others, safety, risk management, supervisors etc. The safety committee should

not be too large. Four or five people seem adequate. Include at least one person from outside the plant (if possible).

Anyone interested in safety during shutdowns and normal plant operations should read the works of Trevor Kletz. Titles are in the resource section. I used some elements of his model for accident investigation in his third edition of *Learning from Accidents*.

Joel

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Joel Levitt, President Springfield Resources
800-242-5656 Voice:610-278-7550 Fax:610-278-7552
Maintenance Training and Consultation
Visit: http://www.maintrainer.com