

Who Are All These People?

In many serious events, there may have been more people in the area than were needed to do or monitor the job. For example:

- Nineteen people managed to escape, although some were engulfed in flames, when investigating a leaking oil pipe in a refinery. The leak suddenly increased, releasing a flammable vapor cloud that ignited (photo 1).
- There were 17 fatalities from an explosion when a compressor removing vapors from a wastewater storage tank was restarted. The tank unexpectedly contained a flammable atmosphere (photo 2).
- Three of five workers investigating a pipe leak in a metal processing plant were killed when a hydrogen fire broke out (photo 3).

The risk of a serious event is higher when equipment is starting up, shutting down, or in abnormal operation. Why? In some cases, safeguards may not be fully functional during a transition. During startup, it is possible that somebody made a mistake in preparing the equipment for startup — perhaps a valve that should be closed has been left open, a blind has been left in a line, or some other error was made. People doing the startup are focused on the task at hand and may not be thinking about what could go wrong or what happens if it does. Upset conditions may create a large number of alarms that hide a potential problem.

Too many people in the area, whether the control room or the plant, can be a distraction, causing bad decisions that could lead to serious process safety incidents. They may also be injured in the incident.



What Can You Do?

- Review operating procedures for nonstandard operating modes – for example, startup, shutdown, process upset, investigating a process or equipment problem. The procedures should consider who is allowed in the area and who isn't. If this information is not clear, call it to the attention of plant management. Here are some questions that the operating procedure should answer:
 1. Who is essential to this task? Who *must* be there? Who does not need to be in the area and should be directed to go to a safer location? For planned activities such as startup and shutdown, this should be determined when the startup or shutdown plan is developed.
 2. If something goes wrong, what could happen to people in the area?
 3. What are the emergency procedures for leaks? Do they consider what people who are not essential for response should do while the leak is being investigated?
 4. Do all people in the area know what they should do if a loss of containment occurs? Do they have the proper personal protective equipment?
- Consider postponing tasks to prevent nonessential people from being in an area during nonstandard operating modes.
- If you don't have a specific, defined job to do in the operation, maybe you should go somewhere else. If you are not sure, ask for permission from the area supervisor or operator to be present while this operation is taking place.

Think about who is not required to be present when starting up equipment or investigating a problem!

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