

## Who are all these people?

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In a number of serious events, there may have been more people in the area than were needed to do or monitor the job. Some examples:

- Nineteen people managed to escape, although some were engulfed in flames, when investigating a leaking oil pipe in a refinery. The leak suddenly increased in size releasing a flammable vapor cloud which ignited (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 (2).
- Three of five workers investigating a pipe leak in a metal processing plant were fatally injured when a hydrogen fire broke out (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 and something is not correct. Perhaps a valve that should be closed has been left open, a blind has been left in a line, or some other error. 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 which hide a potential problem.

Too many people in the area, whether the control room or the plant, can be a distraction, causing bad decisions which could lead to serious process safety events. They may also be injured by the event, and there was no good reason for them to be in the area.



## What can you do?

Review operating procedures for non-standard 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, bring it to the attention of plant management. Here are some questions that the operating procedure should have answers for:

1. Who is essential to this task? Who **MUST** be there? Who are just concerned people who do not need to be in the area and who 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. Review 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? Are they using the proper personal protective equipment?
5. Consider postponing tasks to prevent non-essential people from being in an area during non-standard operating modes.
6. 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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