

What Does That Button Do?

Safety systems need to have a well-defined purpose. When activated, they must reliably respond as designed with the necessary action, such as in instances where a process must be stopped.

The objective of a process control system is to keep the process within the critical safety control limits. (Read the June 2015 Beacon for more information on safety control limits.) When the process exceeds the specified control limits, an action is required, which might include activating the emergency shutdown (ESD) system. Operators must be trained to take the necessary actions at the appropriate time.

You should know how these safety systems operate for your processes. And, if you ask others how they expect these systems to operate, they should give the same answer. There must be only one way for each critical system to perform, and everyone needs to know it.

When safety systems are not well understood, problems can become worse. Personnel may not rely on the safety system and take the wrong actions. Alternatively, they might falsely rely on the safety system and expect it to take actions beyond its capabilities.



▲ It is critical that personnel understand safety system operation to ensure the necessary actions are taken at the appropriate times.

Did You Know?

- Safety systems, including ESD systems, are designed, programmed, and tested to meet the safety requirements of the process and equipment. All changes to the safety systems must go through a management of change (MOC) review (see the July 2017 Beacon).
- Similar to pressure relief devices, safety systems are designed to protect the process, not to control it (see the March 2016 Beacon).
- Safety systems have a defined response to utility failures, such as loss of power or instrument air. This information is often noted on the piping and instrumentation diagram (PID).
- Many companies have a stop work authority policy, which allows, and may even demand, that operators stop the process if it is out of control.

What Can You Do?

- Ensure operators understand the intended operation of safety systems. The more everyone knows, the better the response.
 - Make safety systems a topic for discussion at the next crew or safety committee meeting. If everyone thinks the systems operate differently, you have a problem.
 - During process hazard analyses (PHA) or MOC reviews of these critical safeguards, gain an understanding of operator knowledge and field practices related to safety systems. Any doubt you have in their understanding should be investigated to ensure the systems are operated correctly.

Understand how your safety systems work!

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