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What is Your Role in Hazard Identification and Risk Analysis?

Hazard identification and risk analysis (HIRA) includes all activities involved in identifying hazards in your process, understanding potential incident scenarios, identifying safeguards, and evaluating risk to people, the environment, property, and business. Your plant may call this review a process hazard analysis (PHA), a name used in regulations in some countries, including the U.S. CCPS now uses the term HIRA because it specifically includes risk analysis, which has become a part of this activity in many companies in recent years. Regulations in the U.S. and many other countries, as well as many company process safety standards and policies, require participation of front-line workers in HIRA/PHA studies — plant operators, maintenance workers, and others directly involved with operating and maintaining the plant equipment.

▲ In September 1998, there was a fire in a natural gas processing facility in Longford, Australia. The fire resulted in two fatalities, eight injuries, and the disruption of the gas supply to the state of Victoria for several weeks. A Royal Commission investigation concluded that a HIRA study could have identified the potential failures that caused the incident. Unfortunately, the HIRA study was planned but never conducted. Planning to do something is important. Actually doing it is required for success.

Several techniqes are used for HIRA/PHA. The most common HIRA techniques in the process industries include what-if analysis, checklists, combined what-if/checklists, and hazard and operability (HAZOP) studies. There are also other techniques. Your plant may use some combination of these methods, and you may have a different name for your HIRA/PHA procedure. Regardless of the technique used, the role of the plant worker is critical. Plant personnel operate and maintain the equipment every day, understand how it actually works, and, perhaps more importantly, understand how it can fail. It has been said that there are actually three plants – the plant that the engineers and managers think is there, the plant that the operators initially think is there, and the real plant. One of your key roles is to help make those three plants the same.

What Can You Do to Contribute to a Better HIRA/PHA?

If you are asked to participate in an HIRA/PHA study, here are some things you can do to help make it better:

- Share your knowledge of how the steps in a procedure are actually executed, especially if this is different from what is written. Explain the reasons to the HIRA/PHA team so they can resolve them and make the actual and written procedures the same.
- Before the HIRA/PHA, talk to your colleagues about what you will be doing. Ask them to tell you about any issues that should be discussed by the team.
- Share your years of operating experience, and that of your coworkers, regarding the reliability of equipment, instrumentation, alarms and safety systems. Make sure the team knows what works, what doesn't work well, and what has gone wrong in the past.
- Verify that any operator action that the team considers a safeguard — for example, action in response to an alarm — is understood by operators and can be done reliably in the time required to keep the process safe.
- Don't be shy. Proactively share your knowledge and experience, and don't wait for somebody to ask.
- Remember that your role is both to learn and to teach. You can learn from the other experts on the HIRA/PHA team, and they will learn from you, particularly about how things really work in the plant. Share what you learn with your coworkers after the HIRA/PHA is completed.

Use your experience to help do a good HIRA/PHA and make your plant safer!

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