

# How to be Effective in a Process Safety Role<sup>1</sup>

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*Many factors contribute to being capable and effective in process safety roles. Certainly understanding of engineering and process safety is desirable to establish basic technical competence. Ultimately, though, true capability and career success also requires the ability to work within an organization to help achieve superior, effective performance. This paper discusses how to be effective in a process safety role by developing a strong foundation of technical knowledge and capability, by learning to influence the organization, and by thinking and communicating independently. The result should be both career opportunity and success as well as improved process safety performance, helping to prevent serious injuries and incidents.*

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## **Introduction**

What does it mean to be effective? The dictionary defines effective as “producing a decided, decisive, or desired effect [1].” Peter Drucker said “efficiency is doing things right; effectiveness is doing the right things [2].” In order to be effective, therefore, someone in a process safety (PS) role must correctly identify the right things to work on and produce a desired result, which in this case typically involves maintaining or improving process safety systems and performance. The ability of people in PS roles to select the right work, focus on it, and proceed in ways that positively influence their organization to impact process safety is critical in preventing injuries and, especially in a PS role, in avoiding potentially catastrophic incidents. While most PS training is targeted to improving technical knowledge and capability, an additional focus on how to be effective in a PS role by working successfully within an organization is also desirable. What should be emphasized may vary depending on organizational priorities, safety culture, and process risks, but some key concepts are discussed in this paper.

A focus on safety leadership and effectiveness is nothing new. DeBlois in the early 1900s, for example, discussed the need for “technically trained and experienced men who are capable of studying an industry or process from all its angles and of making constructive recommendations for changes in design and operation which strike to the root of the unnecessary accident evil [3],” and “the safety engineer is, or should be, the technical inspirational leader. It is largely within his power to make or mar the local movement; consequently, his selection, his training, and the

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opportunities afforded him of becoming more proficient in his work are of no slight importance [4].” Many books and articles have since discussed personal effectiveness (e.g., 5, 6) and leadership (e.g., 7, 8). More recently, articles in Process Safety Progress have discussed various aspects of PS roles and effectiveness (9, 10, 11). CCPS has also included Personal Competency as an element of Risk-Based Process Safety (12). This paper explores how to develop strong technical competence in process safety and how to achieve superior, effective performance in a PS role through emphasis on the non-technical “soft” aspects of working in an organization.

### **PSM Roles, Responsibilities, and Capabilities**

Hendershot and Murphy [10] recently provided a good description of the primary roles of PS professionals:

The role of the LPP [Loss Prevention Professional] encompasses a variety of jobs ranging from a process safety generalist involved primarily in project reviews, process hazards analysis, training, incident investigation, and auditing to jobs that specialize in specific technical disciplines such as quantitative risk assessment, vapor cloud dispersion and hazard modeling, reactive chemicals testing, and hazard research [10].

The PS generalist role includes site, business, and corporate PS leaders and resources that focus on implementation and improvement of all or part of the overall corporate PS program, which is the primary focus of this paper. As described by DeBlois in 1918, the primary goal and function of someone in a PS role is the “reduction or elimination of accidents [3],” and this certainly remains true today. The PS role provides a significant opportunity to help prevent serious injuries and potentially catastrophic incidents, ultimately contributing to overall business excellence and sustainability. Many people find the PS role provides great personal and professional satisfaction as well as career success. Specialist roles generally have similar goals and requirements for being effective, although more specialized training and work practices may be needed that vary significantly relative to more generalist roles.

Key responsibilities of the PS role include:

- developing PS knowledge and experience
- sharing and championing PS requirements and systems
- ensuring that program and regulatory requirements are met
- monitoring and improving PS systems and performance.

Given the large scope of most PS programs [12], it is increasingly difficult for one person to be an expert in all aspects of process safety, so many large organizations share these responsibilities among several people who are part of a PS committee or team and who often have part-time PS responsibilities in addition to other work assignments. Typically, someone in a PS role will have at least a few years experience working with site processes, have developed practical experience with most site PS systems, and often will have developed detailed knowledge around one or more specific PS systems such as management of change or process hazards analysis. In most cases, PS roles are not line supervisory roles, so PS professionals assist line leadership by supporting PS program compliance, by evaluating PS system performance via appropriate metrics, and by identifying and helping achieve continuous improvement goals.

To develop technical competence and capability, the PS professional must learn basic PS information and obtain a variety of technical experiences. PS knowledge is based on:

- obtaining both basic and specialized PS training, as appropriate
- reading and understanding PS program standards and guidance
- reviewing related regulatory requirements, such as the OSHA PSM Regulation in the US
- learning associated Recommended and Generally Accepted Good Engineering Practices (RAGAGEP), such as industry consensus codes and standards and other PS literature.

Specific work activities generally include:

- training site personnel on PS system requirements and practices
- periodically reviewing and evaluating PS systems and documentation
- analyzing metrics and performance and assessing trends
- developing and implementing continuous improvement opportunities.

Other important activities that help build PS knowledge and capability include participating in formal PS system audits, investigating near misses and incidents, and networking with other company PS resources to share information and stay current. Development of specific learning goals and documentation of a personal development plan with supervision is important to help ensure that PS learning, experience, and capability improves over time.

### **Influence the Organization Effectively**

Working to champion and improve PS systems and performance by influencing an organization is a fundamental part of PS roles. This requires “soft” skills that are rarely taught as part of engineering and PS training, but that are keys to being effective. DeBlois commented in 1926 on these aspects of safety roles:

The safety engineer must possess initiative and be to a reasonable degree aggressive, though unintelligent aggressiveness is certainly no asset. Too often one encounters safety enthusiasts who are so vigorously and tactlessly aggressive, so prolific in stunts and schemes, so vociferous in their demands for ‘safety first’ that they do as much harm as good [4].

Many general books on being successful and working within organizations are available and recommended [e.g., 13, 14]. In training at DuPont, we discuss the results of research conducted by Robert E. Kelley [15, 16], who investigated what factors made some workers highly productive or star performers, as well as internal studies on EHS professional performance [17].

In order to better identify factors associated with highly productive, effective workers, Kelley studied various cognitive (e.g., reasoning, creativity), personality (e.g., self-confidence, risk-taking), and social (e.g., interpersonal skills, leadership ability) factors through testing and interviews with workers and managers to understand what differentiates star performers and other workers. No significant differences were observed. The study showed, though, that: “It wasn’t what these stars had in their heads that made them standouts from the pack, it was how they used what they had. . . Star performers do their work very differently than the solid, average performing pack [15].” In particular, Kelley was able to identify nine work strategies or behaviors that star performers use effectively to increase their individual productivity:

- Initiative – Going above and beyond the job description for the benefit of the organization
- Networking – Finding routes to knowledge experts who can help solve problems quickly
- Self-Management – Directing work activities and career choices to help ensure high job performance
- Perspective – Seeing projects and problems through the eyes of customers to develop better solutions
- Followership – Focusing on helping the organization succeed by working cooperatively with the organization's leaders
- Teamwork – Actively participating in group goal setting, commitments, activities, and accomplishments
- Leadership – Using expertise and influence to convince a group of people to accomplish a substantial task
- Organizational Savvy – Navigating competing interests in the organization to address conflict and promote cooperation
- Show-and-Tell – Selecting the right information to communicate and developing persuasive presentations

The reader is referred to Kelley's book [15] for additional details on his study as well as to other useful materials on related topics outside the scope of this paper [e.g., 18-24].

Given the large scope of PS programs and the sometimes overwhelming amount of information and potential problems that arise today, the importance of networking should be emphasized. Kelley and others [25-26] discuss the need for effective networking, since it is generally difficult to know everything you might need to solve every problem you encounter. Having access to a network of professionals therefore becomes critical. As Kelley notes:

Networking, more than any other skill in the star performer model, can have dramatic impact on the speed, quality, and quantity of your output. Without a high-quality network, you are unlikely to become a star performer. With one securely in place, you can leverage your knowledge base and give it a tremendous boost [15].

Star performers have access to a broad group of experts with knowledge in a variety of areas, who are often connected to other networks of their own. While most employees have networks available to them, star networks stand-out due to the overall quality of network experts and the speed in which responses are obtained. Participation in star networks is usually earned by having expertise yourself that the network values and by achieving credibility through past actions. Star performers proactively build and participate in networks before they need them. Organizations should focus on helping develop effective internal networks to support all PS professionals as well as on encouraging external networking where appropriate.

### **Think and Communicate Independently**

In addition to developing basic PS knowledge and capability and understanding how to influence an organization, being effective in a PS role requires:

- Sensitivity to operations - PS professionals must be observant and responsive to process operations and systems, looking for, investigating, and understanding any variances from normal operations that could be warning signs of potential problems [27-29]. This will allow communication of and earlier troubleshooting of problems to help prevent more significant problems and potential incidents.

- Independent thinking - Independent thinking is required to avoid groupthink [30] and similar influences, where organizational dynamics can lead group members who work together to try to minimize conflict and reach consensus without necessarily considering and critically evaluating different perspectives and approaches. A variety of reasons can lead to this behavior, including a desire not to look foolish or anger other group members, as well as basic cultural issues related to leadership and openness. The result, though, is that important concerns about process safety may not be brought up or might be overlooked rather than discussed in detail to understand potential PS issues that can lead to injuries or incidents.
- Direct communication – In order to help avoid groupthink and to clearly present possible PS issues and concerns to leadership, avoidance of mitigated speech [31] through direct, honest communication is critical. Mitigated speech is a practice of downplaying the importance of something by being overly polite or deferring to someone with leadership authority or strong personality. The result can be poor communication that can mask important issues and lead to ineffective follow-up.

PS professionals may be the difference between a safe operation and a potentially catastrophic incident. By being sensitive to operations, focusing on independent thinking, and directly communicating any operational and safety concerns to leadership, PS professionals can avoid becoming organizational bystanders [32]. Bystanders sometimes withhold or minimize their concerns and input due to organizational or cultural pressures or a belief that someone else will deal with a problem. Ultimately they may have important information that could make a real difference in helping prevent serious injuries and incidents if it is effectively communicated.

If the PS professional is not effective in expressing and acting on their concerns on PS issues, then who will be? Being effective ultimately means paying close attention and speaking up to help leadership make sure that PS concerns are known and addressed.

## Summary

To be effective in a PS role, it is essential to develop a strong foundation of technical knowledge and capability, to become skilled at influencing the organization, and to think and communicate independently. In most companies, a wide variety of training is offered to develop appropriate expertise in process safety, but often training on the “softer” skills of how to influence and work effectively in an organization is not provided although it is fundamentally important. Upgraded training to include all aspects of how to be effective in PS roles seems increasingly essential. The result should be improved PS performance, helping to prevent serious injuries, and potentially catastrophic incidents.

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