6

WORKFORCE INVOLVEMENT

One of the more humbling, and formative, experiences in a process engineer's career is to describe in detail how some aspect of a process or piece of equipment operates – only to have a seasoned operator respond, "That's all well and good, but let me tell you what *really* happens on a Sunday at 3:00 a.m." The young engineer learns then that operators can provide a valuable source of process knowledge and expertise that complements books, computer models, and theory.

Organizations often have a similar opportunity to tap more deeply into the knowledge and expertise of workers. Operators and maintenance personnel may have a deeper and more authentic understanding of a particular problem, and its solution, than does the engineer. The engineer may have a more profound understanding of potential safety and business risks of a certain course of action than does the facility manager. The contract maintenance employee who happens to notice a sound or a smell that is different from what it was on the first two days on the job may, on that third day, have a more important role to play in the safety of the facility than any 30-year veteran company employee.

6.1   ELEMENT OVERVIEW

Promoting the active involvement of personnel at all levels of the organization is one of five elements in the RBPS pillar of *committing to process safety*. This chapter addresses the diversity of roles that workers can fulfill in support of process safety management system development, implementation, and enhancement. Section 6.2 describes the key principles and essential features of a management system for this element. Section 6.3 lists work activities that support these essential features, and presents a range of approaches that might be appropriate for each work activity, depending on perceived risk, resources,

and organizational culture. Sections 6.4 through 6.6 include (1) ideas for improving the effectiveness of management systems and specific programs that support this element, (2) metrics that could be used to monitor this element, and (3) issues that may be appropriate for management review.

6.1.1   What Is It?

Workers, at all levels and in all positions in an organization, should have roles and responsibilities for enhancing and ensuring the safety of the organization's operations. However, some workers may not be aware of all of their opportunities to contribute. Some organizations may not effectively tap into the full expertise of their workers or, worse, may even discourage workers who seek to contribute through what the organization views as a nontraditional role. *Workforce involvement* provides a system for enabling the active participation of company and contractor workers in the design, development, implementation, and continuous improvement of the RBPS management system.

Effective *workforce involvement* involves developing a written plan of action regarding worker participation, consulting with workers on the development of each element of the RBPS management system, and providing workers and their representatives access to all information developed under the RBPS management system.

Workforce involvement provides for a consultative relationship between management and workers at all levels of the organization. This element is not intended to create a system whereby any worker or group can dictate the content of the RBPS management system; however, for *workforce involvement* to succeed, management must provide due and fair consideration of the input provided by workers.

Unless a reason exists for distinguishing between company employees and contract workers, the term **worker**, as subsequently used in this chapter, should be interpreted as referring to both groups.

6.1.2   Why Is It Important?

Those workers directly involved in operating and maintaining the process are most exposed to the hazards of the process. The *workforce involvement* element provides an equitable mechanism for workers to be directly involved in protecting their own welfare. Furthermore, these workers are potentially the most knowledgeable people with respect to the day-to-day details of operating the process and maintaining the equipment and facilities, and may be the sole source for some types of knowledge gained through their unique experiences. *Workforce involvement* provides management a formalized mechanism for tapping into this valuable expertise.

Workforce involvement also ensures that mechanisms exist for workers to access the information they need to perform their jobs, including fulfilling their roles in support of the implementation of the RBPS management system.

Workforce involvement either directly implements or helps reinforce a number of the essential features of a sound process safety culture, as outlined in Chapter 3. For example:

- **Individual empowerment**. *Workforce involvement* provides explicit roles, responsibilities, and authorities for workers in the planning, implementation, and improvement of the RBPS management system.
- **Deference to expertise**. *Workforce involvement* provides a mechanism for workers to share their expertise in the operation and maintenance of the process. By having a role in helping define their training needs, workers can also help direct the enhancement of their expertise.
- **Open and effective communications**. *Workforce involvement* provides various mechanisms for workers and managers to communicate.
- **Mutual trust**. By enhancing dialogue and interaction between workers and management on process safety issues, *workforce involvement* provides opportunities for fostering mutual trust within the organization.
- **Responsiveness**. The manner and timeliness of management response to worker suggestions will be a primary determinant of the degree of success that can be achieved by the *workforce involvement* program. Slow, no, or superficial response can both cause the loss of time-critical opportunities to respond to problems and serve as a disincentive to future worker participation.

6.1.3 Where/When Is It Done?

By its nature, *workforce involvement* is associated with virtually every process safety activity, whenever and wherever it occurs. Thus *workforce involvement* should begin during the design of the RBPS management system and continue on through its implementation and continuous improvement.

Certain *workforce involvement* activities may be scheduled periodically; for example, a periodic operator opinion survey regarding the adequacy of the refresher training program. In addition, a mechanism permitting continuous input or feedback from workers should be provided as part of the *workforce involvement* program.

Management's responsibility for providing access to information developed under the RBPS management system provides a continuing role for management as such information is developed and modified (see Chapter 8, Process Knowledge Management).

6.1.4   Who Does It?

Management, with worker involvement, establishes the procedures and systems that constitute the *workforce involvement* element, which, in turn, describe the process for identifying opportunities for the workforce to be engaged in the development and implementation of each RBPS element. The *workforce involvement* procedures also establish a responsibility for workers to make suggestions for the development, implementation, and improvement of the RBPS management system and, for management to respond to such suggestions.

Management ensures that required information is available to workers under the *workforce involvement* program.

Finally, workers must support the *workforce involvement* element through their active participation (involvement) in process safety management system activities.

This chapter addresses *workforce involvement* as it pertains to only two groups – the company and the workers. More complex dynamics may exist at a unionized facility at which the union organization and its contract work rules will likely affect *workforce involvement* activities.

6.1.5   What Is the Anticipated Work Product?

The output of the *workforce involvement* element is a RBPS management system that:

- Defines the roles and responsibilities of all involved.
- Meets the current needs of all constituencies.
- Is maintained in an evergreen condition through both management attention and ongoing worker input.
- Provides workers the information necessary to understand the hazards to which they may be exposed, and to support their roles in RBPS management system implementation.

The *workforce involvement* element yields suggestions for the implementation and improvement of any RBPS element. Such suggestions are directed to the respective element custodians for consideration, response, and potential implementation.

Another product of this element should be the active engagement of workers at all levels of the organization, and a correspondingly greater sense of worker ownership of, and commitment to, the successful implementation of the RBPS management system.

6.1.6   How Is It Done?

Implementation of the *workforce involvement* element normally involves (1) identification of the more common roles that workers can and should play in the implementation of the RBPS management system and (2) the establishment of mechanisms to facilitate this participation.   Additional opportunities for worker involvement may be identified and formalized as the *workforce involvement* program evolves. The resulting working environment should be flexible enough to allow capitalizing on unexpected *workforce involvement* opportunities as they arise.

Table 6.1 (adapted from Ref. 6.1) lists general areas of activity in which *workforce involvement* could be encouraged, as identified by the United Kingdom (UK) Health and Safety Executive (HSE).

One worker role would be to provide commentary on, and suggestions related to, the design, development, implementation, and continuous improvement of the RBPS management system.   Mechanisms for soliciting and submitting suggestions should be established, as well as protocols for evaluating these suggestions and providing management response.

TABLE 6.1.   UK HSE Workforce Involvement Suggestions

Policy	Workforce involvement in development or review of policy statement.
Organizing	
Control	Giving employees specific health and safety responsibilities.
Communication	Employees are involved in delivering health and safety messages.
Competence	Employees are involved in design and delivery of training.
Cooperation	Structure of safety committees. Suggestion schemes.
Planning	
Objectives/plans	Employees are involved in setting health and safety plans/objectives.
Risk assessments	Employees participate in risk assessments.
Procurement	Employees are involved in the procurement of equipment, materials, etc.
Design	Employees help design new ways of working.
Problem solving	Employees are involved in problem solving.
Operation of risk control systems	Employees are involved in planning risk control systems.
Measurement	
Active monitoring	Employees assist in carrying out inspections, observations, etc.
Reactive monitoring	Employees participate in accident and near miss investigations and hazard spotting.
Audit and Review	Employees participate in audits of the efficiency, effectiveness, and reliability of the health and safety system and in systematic reviews of performance, based on data from monitoring and audits.

In addition, information required to be shared with workers must be identified and mechanisms established for providing this information. *Employers have the right to require that workers seeking access to trade secret information sign confidentiality agreements before being given access to such information.*

Written policies, protocols, or procedures may be appropriate for documenting and controlling some of the activities mentioned above (see Section 6.2.1).

6.2   KEY PRINCIPLES AND ESSENTIAL FEATURES

Safe operation and maintenance of facilities that manufacture, store, or otherwise use hazardous chemicals requires the active involvement of workers who (1) are aware of the hazards in the workplace, (2) understand the engineered controls and management systems provided to address those hazards, and (3) accept and strive to fulfill their roles and responsibilities in support of providing a safe work environment. The following key principles should be addressed when developing, evaluating, or improving any management system for the *workforce involvement* element.

- Maintain a dependable practice.
- Conduct work activities.
- Monitor the system for effectiveness.
- Actively promote the *workforce involvement* program.

The essential features for each principle are further described in Sections 6.2.1 through 6.2.4. Section 6.3 describes work activities that typically underpin the essential features related to these principles. Facility management should evaluate the risks and potential benefits that may be achieved as a result of improvements in this element. Based on this evaluation, management should develop a management system, or upgrade an existing management system, to (1) address some or all of the essential features and (2) execute some or all of the work activities, depending on perceived risk and/or process hazards that it identifies. However, these steps will be ineffective if the accompanying *process safety culture* element does not embrace the use of reliable management systems. Even the best management system, without the right culture, will not produce an actively involved work force.

6.2.1   Maintain a Dependable Practice

When a company identifies or defines an activity to be undertaken, that company likely wants the activity to be performed correctly and consistently

over the life of the facility. For the *workforce involvement* practice to be executed dependably across a company or facility involving a variety of people and situations, the following essential features should be considered.

Ensure consistent implementation. For consistent implementation, the *workforce involvement* program should be documented to an appropriate level of detail, addressing the general management system aspects discussed in Section 1.4. At union facilities, some aspects of the *workforce involvement* program may also be reflected in the work rules negotiated between the union and the company.

Each RBPS element will offer several opportunities for worker involvement in the design, development, implementation, and continuous improvement of the element. The more common activities should be identified and documented in element-specific program documentation. Protocols for addressing worker suggestions should be established (e.g., how a proposed procedure modification, or a suggested change in a maintenance frequency, is handled). Additional, more general program documentation may be required for the *workforce involvement* element itself.

While follow-up responsibility for suggestions made regarding particular elements will rest with the corresponding element owner, organizations may find it beneficial to assign one individual to monitor the implementation of the *workforce involvement* element (i.e., to function as the *workforce involvement* element owner).

Involve competent personnel. All facility personnel should have a basic awareness of the *workforce involvement* program to enable them to interact with it and contribute to it. All workers must understand their personal responsibility for actively participating in the design, development, implementation, and continuous improvement of the RBPS management system. Newly assigned personnel should be oriented on the *workforce involvement* program as part of their initial process safety management system training. Periodic reminders within workforce safety and information meetings and toolbox meetings should help maintain awareness of the program and serve to solicit input.

Managers responsible for the various elements must understand their roles and responsibilities with respect to (1) soliciting and accepting worker participation and (2) providing open-minded and timely responses to suggestions from workers.

6.2.2 Conduct Work Activities

Provide appropriate inputs. Inputs to the *workforce involvement* program include the suggestions from, and active participation of, workers in the design, development, implementation, and continuous improvement of the RBPS management system. Written program documentation should, at a

minimum, identify opportunities for worker participation that are required by corporate or regulatory requirements, if such exist.

Apply appropriate work processes and create element work products. *Workforce involvement* work practices and products will be specific to the various elements. For example, for the *operating procedures* element, one work process might involve (1) an operator submitting a request for a procedure modification, (2) review of the suggestion by the procedure coordinator, who decides whether the revision should be adopted, adopted in principle, or rejected, (3) response to the individual who made the suggestion, explaining the basis for the action taken, (4) review of the proposed action with other employee representatives, and (5) necessary action, if any, to implement the decision made in step (2). The resulting work product(s) could be the revised procedure (if appropriate) and the records of the submitted suggestion and its resolution.

All of the steps outlined above for the work practice are important; however, it is essential that the decision-making process in step (2) be open-minded and transparent, and that appropriate feedback be given in step (3), especially if the suggestion is rejected. For the *workforce involvement* program to thrive, workers must see a positive return on their investment of time and effort devoted to participation. This does not mean that suggestions cannot be critically reviewed and, when appropriate, rejected.

6.2.3   Monitor the System for Effectiveness

Ensure that the workforce involvement practices remain effective. Once the *workforce involvement* program is in place, periodic monitoring, maintenance, and corrective action will be needed to keep it operating at peak performance and efficiency. A carefully selected set of relevant metrics should be identified for monitoring the role of *workforce involvement* in enhancing the effectiveness of the associated RBPS elements (see Section 6.5).

Evaluations of RBPS element performance problems should include consideration of the amount and relevance of *workforce involvement* in the implementation of the element. For example, an audit finding stating that operating procedures are generally out of date would present the opportunity for greater involvement by operators in identifying and addressing procedure deficiencies. Alternatives for addressing this gap could include a more formalized operating procedure revision program or a team-based approach in which operators work collectively to review and update procedures on a periodic basis. Workers should be involved in selecting which alternative is chosen.

Section 6.6 suggests a number of management review activities that could be used for monitoring *workforce involvement* effectiveness.

6.2.4 Actively Promote the Workforce Involvement Program

Stimulate workforce participation. By its very nature, the *workforce involvement* program cannot achieve its intended goals without active worker participation. Initiatives may be required, especially initially, to stimulate such participation. This may be particularly true for organizations (1) lacking a tradition of seeking or accepting worker input on such matters or (2) whose past management support for safety programs has been weak.

Adopt new workforce participation opportunities. A list of tasks included in the program documentation is unlikely to comprehensively address all opportunities for worker participation in the design, development, implementation, and improvement of the RBPS management system. As the RBPS management system develops, and as the organization's process safety culture matures, new opportunities for worker involvement may be created or otherwise become apparent. The *workforce involvement* program should be sufficiently flexible to embrace such opportunities as they are identified.

Publicize the success of the workforce involvement program. Sharing the results from the implementation of the *workforce involvement* program should help stimulate worker interest in participation. Demonstrating the positive benefits yielded by the program should illustrate both a return on the investment of effort made by workforce participants and the receptivity of management to the involvement of workers in the design, development, implementation, and continuous improvement of the RBPS management system.

6.3 POSSIBLE WORK ACTIVITIES

The RBPS approach suggests that the degree of rigor designed into each work activity should be tailored to risk, tempered by resource considerations, and tuned to the facility's culture. Thus, the degree of rigor that should be applied to a particular work activity will vary for each facility, and likely will vary between units or process areas at a facility. Therefore, to develop a risk-based process safety management system, readers should perform the following steps:

1. Assess the risks at the facility, investigate the balance between the resource load for RBPS activities and available resources, and examine the facility's culture. This process is described in more detail in Section 2.2.
2. Estimate the potential benefits that may be achieved by addressing each of the key principles for this RBPS element. These principles are listed in Section 6.2.

3. Based on the results from steps 1 and 2, decide which essential features described in Sections 6.2.1 through 6.2.4 are necessary to properly manage risk.
4. For each essential feature that will be implemented, determine how it will be implemented and select the corresponding work activities described in this section. Note that this list of work activities cannot be comprehensive for all industries; readers will likely need to add work activities or modify some of the work activities listed in this section.
5. For each work activity that will be implemented, determine the level of rigor that will be required. Each work activity in this section is followed by two to five implementation options that describe an increasing degree of rigor. Note that work activities listed in this section are labeled with a number; implementation options are labeled with a letter.

> *Note: Regulatory requirements may specify that process safety management systems include certain features or work activities, or that a minimum level of detail be designed into specific work activities. Thus, the design and implementation of process safety management systems should be based on regulatory requirements as well as the guidance provided in this book.*

6.3.1   Maintain a Dependable Practice

Ensure Consistent Implementation

1. Develop written program documentation for managing the overall *workforce involvement* element and for administering *workforce involvement* activities within the various RBPS elements. Such documentation should (1) describe for each RBPS element relevant worker activities for participating in the design, development, implementation, and continuous improvement of the RBPS management system, (2) identify those activities for which worker involvement is mandatory, for example, activities that address specific corporate or regulatory requirements, and describe mechanisms for obtaining this input, and (3) include specific roles and responsibilities for RBPS element owners, and others in management, in regard to workforce involvement issues.
    a. Written procedures address only explicit regulatory requirements.
    b. Written procedures have been prepared to address a diverse range of *workforce involvement* opportunities.
2. Establish an owner for the *workforce involvement* element to monitor and ensure its effectiveness on a routine basis.

a. Individual RBPS element owners are expected to monitor *workforce involvement* within their elements.

b. A facility *workforce involvement* owner has been designated; this person monitors the element on a time-available basis.

c. A facility *workforce involvement* owner has been designated and is provided the time and resources to regularly monitor, advocate, and strengthen the element.

Involve Competent Personnel

3. Provide awareness training on the *workforce involvement* element to all workers.

a. Information on the *workforce involvement* element is shared in an informal fashion, such as through e-mail.

b. Initial *workforce involvement* awareness training is provided once, perhaps as part of new hire orientation.

c. Periodic refresher training is provided for *workforce involvement* awareness training.

4. Provide detailed training to all affected workers who are assigned specific roles within the RBPS management system.

a. Initial *workforce involvement* detailed training is provided once to key personnel.

b. Periodic refresher training for *workforce involvement* detailed training is provided to key personnel.

6.3.2 Conduct Work Activities

Provide Appropriate Inputs

5. Provide systems for scheduling and facilitating the active involvement of workers in the implementation of the various RBPS elements; for example, inviting workers to participate on risk analysis teams.

a. Formal systems have been established for commonly anticipated activities.

b. Formal systems have been established for a diverse range of activities in all RBPS elements.

6. Provide systems for workers to provide their input on issues related to the design, development, implementation, and continuous improvement of the RBPS management system. For example, establish a formal system for suggesting operating procedure revisions or for soliciting feedback at information and toolbox meetings.

a. Informal systems have been established.

b. Formal systems have been established for some activities.

c. Formal systems have been established for all commonly anticipated activities.

Apply Appropriate Work Processes and Create Element Work Products

7. Establish protocols for management to follow when considering and responding to worker suggestions. Such protocols help ensure proper and timely management consideration and resolution of worker suggestions related to the RBPS management system.

    a. Responses are provided, but response time may be slow.

    b. Timely consideration and response to suggestions is a policy requirement.

    c. Response time is monitored and corrective actions are implemented, as required, when response times are excessive.

8. Ensure that workers who make suggestions under the *workforce involvement* program receive appropriate feedback, including an explanation of the manner and rationale for resolving their suggestions.

    a. Informal feedback is provided.

    b. Feedback is formally documented and tracked.

    c. Records of worker participation are maintained, and exceptional levels of participation are commended.

9. Provide a mechanism for resolving disputes, such as a worker dispute of a management decision to reject a suggestion.

    a. Disputes are resolved though informal mechanisms.

    b. A formal program exists with management arbitrating all disputes.

    c. A panel with both management and worker representation arbitrates all disputes.

10. Ensure timely implementation of recommendations accepted under the *workforce involvement* program.

    a. Implementation timeliness is addressed in an ad hoc fashion.

    b. Timely implementation is a policy requirement.

    c. Implementation time is monitored and corrective actions are taken, as required, when response times are excessive.

6.3.3   Monitor the System for Effectiveness

Ensure that Workforce Involvement Practices Remain Effective

11. Develop key metrics for monitoring the performance and effectiveness of the *workforce involvement* element (see Section 6.5).

    a. A few, predominately lagging, indicators are tracked.

    b. A broader set of leading and lagging indicators have been established and are tracked intermittently.

    c. A comprehensive set of leading and lagging indicators have been established and are tracked regularly.

12. Provide timely resolution of, and improvement opportunities for, any *workforce involvement* performance problems identified by the metrics.

    a. Resolution timeliness is addressed in an ad hoc fashion.

    b. Timely resolution is a policy requirement.

    c. Implementation time is monitored and corrective actions are taken, as required, when response times are excessive.

6.3.4 Actively Promote the Workforce Involvement Program

Stimulate Participation in the Workforce Involvement Program

13. Encourage formal and informal activities that enhance *workforce involvement*, for example, safety suggestion programs, safety lotteries, other incentives for participation, job observation programs, safety councils and focus teams, and management by walking around.

    a. Occasional, ad hoc efforts exist to stimulate *workforce involvement*.

    b. Organized efforts exist for some of the more significant *workforce involvement* initiatives.

    c. Diverse efforts exist to stimulate a variety of *workforce involvement* initiatives. The effectiveness of these efforts is monitored, and they are modified as required.

14. Implement controls to ensure the integration of contract workers into the *workforce involvement* program (contractor organizations, especially transient or short term contractors, may be especially difficult to engage and actively involve in the process).

    a. Contract workers participate in the *workforce involvement* program on an ad hoc basis.

    b. Contract workers most directly exposed to process hazards regularly participate in the *workforce involvement* program.

    c. Participation in the *workforce involvement* program has been integrated throughout the contractor ranks.

Adopt New Opportunities for Participation in the Workforce Involvement Program

15. Modify the written procedures for managing *workforce involvement* to include any new opportunities that should be formalized.

    a. New *workforce involvement* opportunities are pursued on an ad hoc basis.

    b. New *workforce involvement* opportunities, when identified, are integrated into the written procedures.

    c. The facility proactively seeks to identify new *workforce involvement* opportunities and integrate them into the written procedures.

Publicize the Success of the Workforce Involvement Program

16. Actively publicize the workforce involvement program, its goals, the progress of its implementation, and notable successes achieved.

a.   Publicity for the *workforce involvement* program is provided in an ad hoc fashion.
b.   The *workforce involvement* program is publicized when more notable successes are achieved.
c.   The facility aggressively publicizes the *workforce involvement* program and its successes.

6.4   EXAMPLES OF WAYS TO IMPROVE EFFECTIVENESS

This section provides specific examples of industry tested methods for improving the effectiveness of work activities related to the *workforce involvement* element. The examples are sorted by the key principles that were first introduced in Section 6.2. The examples fall into two categories:

1.   Methods for improving the performance of activities that support this element.
2.   Methods for improving the efficiency of activities that support this element by maintaining the necessary level of performance using fewer resources.

These examples were obtained from the results of industry practice surveys, workshops, and CCPS member-company input. Readers desiring to improve their management systems and work activities related to this element should examine these ideas, evaluate current management system and work activity performance and efficiency, and then select and implement enhancements using the risk-based principles described in Section 2.1.

Additional examples are provided in Reference 6.1, which can be downloaded from the UK Health and Safety Executive website.

6.4.1   Maintain a Dependable Practice

- *Develop the basic framework or standards for the workforce participation plan at the corporate level.* Facility efforts can focus on developing detailed implementation plans and assigning of roles and responsibilities to meet facility-specific needs.
- *Define, subject to risk-based considerations, classes of issues that can be resolved by workers without management involvement.* Examples of such issues might include editorial and other minor changes to operating procedures. Establish worker-implemented management of change controls for these issues.
- *Provide for substantive workforce participation in the creation or revision of safety policies and procedures, and the establishment of*

safety goals and plans. People tend to find more relevance in the rules and objectives that they helped establish (Ref. 6.1).

- *Create positions for safety champions, staffed by workforce volunteers, to serve in an advisory and mentoring role.* Provide additional training to safety champions, addressing topics such as hazard recognition, job safety evaluations, and behavioral-based safety. Use the safety champions to assist in new employee orientation, communication of safety-related messages, conduct of safety meetings, and so forth (Ref. 6.1).

- *Provide training on hazard identification and basic risk assessment principles to all operators and maintenance personnel.* A basic understanding of process hazards and their evaluation should help workers understand the importance of maintaining and enhancing the RBPS management system.

6.4.2 Conduct Work Activities

- *Institute a worker job safety observation program.* Programs that provide direct workforce involvement, such as using work observation cards or forming a peer review and counsel/challenge system, may be a stepping stone to engaging workers more broadly in the RBPS management system.

- *Implement a suggestion submission and response program independent of any particular RBPS element.* Individual elements may have unique processes for making suggestions (e.g., an operating procedure suggestion program). A more general suggestion program may be warranted for the balance of the RBPS elements.

- *Include personnel from all levels of the organization in a regularly scheduled program of field safety and housekeeping inspections.* Emphasize that these inspection teams should include, and not necessarily be led by, upper facility management and their direct reports. (See Chapter 17, Conduct of Operations.)

- *Implement a program of informal what-if exercises, such as table top drills, as part of the process safety training program.* These programs should be developed and conducted with significant worker involvement. (See Chapter 14, Training and Performance Assurance.)

- *Conduct an annual process technology or process safety school developed and taught with significant workforce involvement.* This program should serve as both an enhanced learning experience for the workforce developers and instructors and a mechanism for getting more of the workforce involved in nontraditional roles.

- *Institute a formal mentoring program in which senior, experienced workers assist in the development of less experienced personnel.* A program such as this should help preserve the organizational memory

not captured by formal training programs. Appropriate oversight may be warranted (1) to ensure that organizational memory does not propagate bad habits and misconceptions and (2) to capture relevant lessons learned that could be added to formal training programs.

- *Assign experienced operators and maintenance personnel to project design teams.* This allows workers to share their practical knowledge of real-life operability and maintenance issues with the project team.

- *Conduct periodic offsite meetings, during which workers from all levels collaboratively identify potential opportunities for system improvements.* Such meetings (1) help focus participants on the task at hand by freeing them from worksite distractions and (2) emphasize that the organization values workforce involvement sufficiently to incur the added costs of such forums.

- *Use a web-based electronic survey to collect feedback from manufacturing and research facilities.* Such surveys provide another avenue for identifying issues, tools, and solutions that can be further leveraged to improve RBPS management system quality. These surveys may reach portions of the workforce, such as researchers and engineers, who are less likely to participate in other, more traditional suggestion programs. (See Chapter 5, Process Safety Competency.)

- *When communicating safety messages or safety policies, include a convenient way for the reader to provide feedback (e.g., a tear-off sheet for paper communications).* Feedback is more likely to be provided if it is easier for the worker to do so (Ref. 6.1).

- *Form functional teams for relevant RBPS elements, with worker representation from all levels.* For example, a central management of change (MOC) team might review the more significant change requests to ensure consistent treatment across the facility and to ensure that no critical MOC controls are missed. The organization may elect to establish a Process Safety Steering Committee with workforce membership that meets regularly, reviews all RBPS elements on a regular basis, and reviews and approves all changes to RBPS elements.

- *Reassign selected workers from their normal duties and dedicate them to accomplishing a key RBPS task.* Temporarily relieving workers of their normal job responsibilities, such as placing an operator on day shift to assist in rewriting procedures or developing a new RBPS management system, ensures that they have time to focus on the task and reinforces the organization's value for the *workforce involvement* program.

- *Budget time into work schedules to allow workforce members to fulfill formalized workforce involvement activities.* If fully relieving workers of their routine responsibilities (as discussed above) is not feasible, appropriate allowances must be made to permit workers to satisfy their *workforce involvement* responsibilities (Ref. 6.1).

- *Establish and adhere to schedules for senior staff to spend time in work areas.* Direct contact and discussions between managers and workers enables workers to provide feedback on RBPS management system performance issues and to seek information from staff. It is helpful if workers can anticipate these opportunities, and count on them occurring.
- *Use a quality circle approach to addressing RBPS management system problems.* Involving diverse worker teams to address problems and propose solutions may enhance the quality and productivity of the process.
- *Establish inter-facility networks to address common issues.* Such systems could allow each facility to solicit input from, or otherwise tap into the expertise and perspective of, workers at other company facilities who are potentially seeking to solve the same problems.
- *Strive to motivate a broad range of participation.* The same workers may perennially volunteer to fulfill the same *workforce involvement* roles. Without discouraging reliable contributors, strive to motivate others to accept their fair share of the responsibility so the company benefits from the widest possible range of inputs.

6.4.3 Monitor the System for Effectiveness

- *Involve the workforce in identifying suitable RBPS metrics and in monitoring and communicating this information to management.* Workers should become more attuned to improving RBPS management system performance if they have a substantive role in monitoring that performance (Ref. 6.1).
- *Maintain auditable records documenting workforce involvement activities.* Such records may be mandatory in situations for which *workforce involvement* activities are dictated by corporate or regulatory requirements. Maintain records of other nonmandatory activities in sufficient detail to allow management to determine whether the *workforce involvement* program is encouraging a level of activity appropriate to stimulate the improvement of the RBPS management system.
- *Conduct periodic surveys to monitor worker attitudes and to solicit inputs.* Such surveys may provide leading indicators, which may provide early warning of a change in level of workforce engagement and involvement.

6.4.4 Actively Promote the Workforce Involvement Program

- *Create success stories to stimulate interest in the workforce involvement program.* Identify needed RBPS improvements and empower worker teams to address these issues. Provide the resources

and autonomy necessary for the teams to succeed, then publicize the successes when they occur. Emphasize that management is receptive to, and awaiting, worker suggestions for the next round of problems to be addressed.

- *Institute a program that provides recognition or awards for safe behaviors to be given by peers.* Peer recognition can be a significant motivator. However, more tangible (e.g., financial) incentives should be focused on levels of performance that go beyond simply performing the day-to-day job as anticipated.

- *Conduct small, informal meetings with the facility manager and just a few workers.* Use these meetings to discuss safety issues, gather worker feedback, and stress *workforce involvement.* Schedule an ongoing series of meetings so that all workers will have an opportunity to participate.

- *Make use of electronic bulletin boards to complement face-to-face meetings.* Post meeting minutes, other communications, improvement requests and resolutions, preliminary incident reports, *workforce involvement* successes, and so forth for all workers to read.

6.5   ELEMENT METRICS

Chapter 20 describes how metrics can be used to improve performance and when they may be appropriate. This section includes several examples of metrics that could be used to monitor the health of the *workforce involvement* element, sorted by the key principles that were first introduced in Section 6.2.

In addition to identifying high value metrics, readers will need to determine how to best measure each metric they choose to track. In some cases, an ordinal number provides the needed information, for example, total number of workers. Other cases, such as average years of experience, require that two or more attributes be indexed to provide meaningful information. Still other metrics may need to be tracked as a rate, as in the case of employee turnover. Sometimes, the rate of change may be of greatest interest. Since every situation is different, the reader will need to determine how to track and present data to most efficiently monitor the health of RBPS management systems at their facility.

6.5.1   Maintain a Dependable Practice

- *Percentage of workers trained on workforce involvement and their responsibilities.* A low value may indicate that the organization provides insufficient emphasis and priority on workforce involvement.

- *Percentage of managers trained on workforce involvement and their responsibilities.* A low value may indicate that the organization provides insufficient emphasis and priority on workforce involvement.

6.5.2 Conduct Work Activities

- *Percentage of workers who have participated in key defined workforce involvement activities, such as submitting a suggestion, serving on a risk analysis team, or participating in an investigation, over the last 12 months.* A low value may indicate either a lack of awareness on the part of workers, or a lack of emphasis on workforce involvement within the organization.

- *Rate of submittal of worker suggestions, and changes in rate with time.* A low rate may reflect a low level of employee engagement in improving process safety, or that employees perceive a low return on investment for their participation. A change in the rate, up or down, may indicate increasing or decreasing employee engagement or may simply be a result of changes in the rate at which modifications are being made to management systems.

6.5.3 Monitor the System for Effectiveness

- *Number of suggestions that have not been evaluated (no decision made to accept or reject) and average/maximum delinquency.* A high backlog of unresolved suggestions, or long delinquency periods, may indicate that the organization provides insufficient emphasis and priority on *workforce involvement.*

- *Number of accepted suggestions that have not been implemented and average/maximum delinquency.* A high backlog of accepted suggestions that have not been implemented, or long delinquency periods, may indicate that the organization provides insufficient emphasis and priority on *workforce involvement.* Further inquiry may be required to determine if this problem is unique to the *workforce involvement* element or whether the organization is generally slow in implementing recommendations from other RBPS elements.

- *Percentage of suggestions accepted.* A low value could reflect either (1) low management receptivity to suggestions or (2) suggestions that are either of poor quality or are not consistent with the focus of the suggestion program (indicating a possible need for additional worker training).

6.5.4 Actively Promote the Workforce Involvement Program

- *Results of worker attitude surveys with respect to acceptance of process safety responsibilities.* Surveys showing a high acceptance of process safety responsibilities may indicate successful implementation of the *workforce involvement* element.

6.6 MANAGEMENT REVIEW

The overall design and conduct of management reviews is described in Chapter 22. However, many specific questions/discussion topics exist that management may want to check periodically to ensure that the management system for the *workforce involvement* element is working properly. In particular, management must first seek to understand whether the system being reviewed is producing the desired results. If the organization's level of *workforce involvement* is less than satisfactory, or it is not improving as a result of management system changes, then management should identify possible corrective actions and pursue them. Possibly, the organization is not working on the correct activities, or the organization is not doing the necessary activities well. Even if the results are satisfactory, management reviews can help determine if resources are being used wisely: are there tasks that could be done more efficiently or tasks that should not be done at all? Management can combine metrics listed in the previous section with personal observations, direct questioning, audit results, and feedback on various topics to help answer such questions. Activities and topics for discussion include the following:

- Determine whether *workforce involvement* program documentation is periodically updated as new involvement opportunities are identified and developed.
- Evaluate what housekeeping practices indicate with regard to worker acceptance of safety responsibilities. Poor housekeeping practices may indicate a lack of worker engagement that may extend into the *workforce involvement* element.
- Identify which RBPS elements are most frequently and least frequently addressed by worker suggestions. Are the less frequently mentioned elements truly so robust, or are they out of sight and out of mind, perhaps warranting increased management emphasis?
- Discuss process safety responsibilities with workers. Do workers have a prevalent sense of ownership for process safety programs, or is enhancement of the RBPS management system considered someone else's responsibility?
- Review a sampling of safety observation cards to gain a sense of the scope and quality of suggestions. For example, do these cards often recommend that someone address issues that the submitter could have resolved personally? If so, this may indicate a low sense of awareness of personal responsibility for safety performance.
- Determine which workers are most commonly involved in RBPS management system activities. Are activities consistently staffed by the same small group of reliable contributors, or is there broader involvement across the organization?

- Discuss participation in RBPS management system activities with workers to identify their motivation. Do they participate because it is obligatory, or because they see value in doing so?
- Review the content of communications that address RBPS management system implementation. Do these communications provide sufficient focus on *workforce involvement* success stories?
- Determine from discussion with workers whether they believe that management is sufficiently responsive to worker suggestions for improving RBPS management system implementation. Do workers feel that their suggestions are given appropriate consideration? Are accepted suggestions implemented in a timely fashion?
- Based upon records reviews and discussions with contractor personnel, determine if contractors are effectively being integrated into the *workforce involvement* program.

A RBPS management system will be more effective if workers share in the ownership of the program. The *workforce involvement* element provides mechanisms for workers to have a substantive, tangible, and important role in guiding and enhancing the programs that help ensure their safety.

6.7   REFERENCES

6.1   UK Health and Safety Executive, Employee Involvement in Health and Safety: Some Examples of Good Practice, WPS/00/03, 2001, www.hse.gov.uk/research/hsl_pdf/2001/employ-i.pdf.

Additional reading

UK Health and Safety Executive, Workforce Participation in the Management of Occupational Health and Safety, HSL/2005/09, 2004, http://www.hse.gov.uk/RESEARCH/hsl_pdf/2005/hsl0509.pdf.