PS: Describe your professional background and your position as chair of the Z10 Accredited Standards Committee on Occupational Health and Safety Management Systems (OHSMS).

James: I am president of Safety Solutions, a consulting firm specializing in management systems and the application of systems thinking to safety and health. I am experienced in machinery and equipment risk assessment, safety and health management system improvement, accident investigation and regulatory compliance. I also have experience working with large companies, have conducted inspections at more than 350 workplaces and have worked on more than 85 fatality investigations.

I was involved in the initial AIHA formation of the Z10 Committee and was elected vice chair during our first meeting on Feb. 8, 2001. Work groups were formed to draft sections of the standard between full committee meetings. I was chosen to chair the edit committee, which consolidated work group submissions.

The standard was balloted and approved by ANSI in 2005. Alan Leibowitz, Z10 chair, joined the AIHA board. As the secretariat, AIHA rules prohibit board members from chairing ANSI committees. In 2009, I was elected Z10 chair and Vic Toy was elected vice chair. The committee is a wonderful collection of highly skilled professionals from a wide array of employment sectors, unions, government organizations and technical resources.

Employee Participation and Planning—Identification, Assessment and Prioritization. The bibliography and references appendix was also updated and provides a list of publications categorized by Z10 sections. Substantial revisions were also made to the right-hand column advisory language in the planning section. Major requirement changes include:

- Top management obligation to ensure that the organization’s performance review, compensation, reward and recognition systems are aligned with the OHS policy and the OHSMS performance objectives (3.1.3C).
- Clarification between initial and ongoing reviews during the planning process (4.1).
- Periodic review and update of implementation plans (4.4C).
- While risk assessment was included in various requirements in the 2005 standard, a new specific risk assessment requirement was added in the 2012 revision (5.1.1).
- “Design Review and Management of Change” includes a process to verify that changes in facilities, documentation, personnel and operations are evaluated and managed to ensure that safety and health risks arising from these changes are controlled (5.1.3.2). In addition, employee participation was added to the process requirements for design review and management of change.
- The organization must consult with contractors and relevant external interested parties when any changes affect its OHS (5.3.D).
- The organization’s processes shall include a performance assessment relative to applicable legal and other requirements as determined by the organization (6.1F).

PS: In 2012, the Z10 committee revised the OHSMS standard (ANSI/AIHA/ASSE Z10-2012). What major changes does the revised standard include?

James: The committee’s primary focus during the 2012 revision was to further enhance the standard’s usability by adding new appendices, improving others to clarify the intent of requirements, and to provide implementation examples and guidance. Many organizations that had implemented management systems based on Z10 provided valuable input.

Five new appendices were added covering these topics: risk assessment, management of change, procurement, contractor safety and health, and management system standard comparison. Significant revisions were made to “Encouraging Management System Improvement, Accident Investigation, and Guidance.” The bibliography and references appendix was also updated and provides a list of publications categorized by Z10 sections. Substantial revisions were also made to the right-hand column advisory language in the planning section. Major requirement changes include:

PS: How have SH&E professionals responded to the revised standard thus far?

James: Since the first edition was approved by ANSI in 2005, it quickly became the top-selling publication for AIHA, the secretariat for the standard at that time. ANSI Z10 has had a profound effect in advancing the understanding and implementation of OHSMS. The standard provides a roadmap for organizational transformation to an integrated management system.

Professionals recognize that Z10 was carefully crafted by a committee membership with broad representation from stakeholders, including companies and unions, as well as educational and government organizations. The result is a standard specifically designed for U.S. business, taking into consideration U.S. business practices, culture

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and legal system. One original priority of the Z10 Committee was to create a standard appropriate for the U.S. but harmonized with other management system standards, including international standards, to facilitate implementation and integration with quality and environmental management systems.

ANSI Z10 continues to be a popular topic at regional and national conferences and webinars. The ANSI Z10 webinar hosted by ASSE in November 2012 (http://eo2.commpartners.com/users/asse/session.php?id=9937) was one of ASSE’s most-attended webinars.

**PS:** Has the Z10 standard highlighted the connection between management systems and improved OHS performance?

**James:** Organizations that implement OHSMS conforming to ANSI Z10 tend to be advanced, creating generally successful safety and health programs. These organizations recognize that while their programs have been successful, gaps in performance still exist and sustained improvement depends on certain individuals, rather than the processes and system. As organizations improve their management system in conformance with Z10, the emphasis of activity shifts from reactive to proactive. Process improvement is emphasized rather than lagging measures, such as OSHA incident rates, and comprehensive planning takes the place of crisis management.

The result is dramatic improvement in safety and health performance through process improvement, which is the result of greater employee involvement, a more supportive management culture, better integration of processes and feedback loops that previously had not existed.

**PS:** According to the Z10 standard, how does an OHSMS continuous improvement cycle align with the plan-do-check-act (PDCA) model?

**James:** Walter Shewhart developed the PDCA model and process while working at Western Electric in Chicago, IL. W. Edwards Deming later popularized the use of the process for quality improvement. PDCA is the most widely accepted and applied method for process improvement in the world. ANSI Z10 is harmonized with many other management system standards and guidelines based on the PDCA model (Figure 1).

The structure of ANSI Z10 is based on the PDCA model, which can be applied to improvement in any area of endeavor. Sustained performance improvement in any area of business always begins with a vision (Section 3) and careful planning. Comprehensive planning clarifies the organization’s understanding of the opportunity or problem(s) and establishes the path to improvement (Section 4). Implementation plans are carried out (Section 5). Performance is checked by monitoring and measuring processes (Section 6). Finally, adjustments to the plans, implementation, monitoring and measurement processes are made to further improve the system based on feedback. The cycle is repeated endlessly, resulting in continuous improvement.

Organizations are often misled to believe that implementation of a program of the month will result in sustained improvement, only to be disappointed with results far from expectations.

**PS:** What Z10 requirements are intended to ensure effective employee participation in an OHSMS?

**James:** The Z10 requirements in Section 3.2 and elsewhere in the standard establish the strongest framework for employee participation of any management system standard. The intent is to mobilize the entire workforce, at all levels, for continuous improvement in safety and health. The standard specifically requires organizations to establish processes to provide employees and employee representatives with the mechanisms, time and resources necessary to participate in, at a minimum, the processes of planning, implementation, evaluation, and corrective and preventive action. Organizations must provide employees
Changes in Z10

Vic Toy, M.P.H., CSP, CIH, and Z10 vice chair, wrote an article for The Synergist summarizing the changes in the 2012 revision of Z10. Toy is a senior advisor and program manager for strategy and design in the Integrated Health Services group for IBM Corp. Visit http://goo.gl/HOn2Y to read the article.

For more information on Z10, read the Standards Insider article on pp. 26-27 in this issue of PS.

and their representatives with timely access to information relevant to OHSMS. Employees play a crucial role in hazard identification and control, feedback and integration.

PS: According to the standard, top management should review the OHSMS at least annually to recommend improvements. How can top management ensure that its review process is both objective and effective?

James: This is a great and critical question. Z10 requires management to use a broad range of information, such as progress on risk reduction, addressing system deficiencies, input from employees, audit results, status of implementation plans related to objectives and other factors. Considering a broad range of factors rather than just traditional lagging indicators, such as incident rates, management will formulate a much more accurate and objective assessment of overall performance.

The quality of the review is determined by management’s commitment and understanding of systems and, importantly, by the quality of information provided to them. The management review is the final line of defense against serious system deficiencies. It is easy to blame management for these major shortcomings. Systems thinking demands that the focus not be on who is to blame but on the underlying causes. Systems thinking is characterized by understanding how things influence one another within a whole. Traditional safety and health programs focus on individual parts. Z10, like other management system standards, emphasizes the interrelationships and integration of processes and business systems. For example, what do the results of an incident investigation tell us about our hazard recognition process or our hazard control process or employee involvement?

Systems thinking is also characterized by viewing problems as part of an overall system. Rather than looking for who is to blame or who caused a problem, identify the system deficiencies that led to the problem.

PS: What advice do you have for SH&E professionals who are trying to incorporate the Z10 standard into their organization for the first time?

James: Successful implementation of Z10 or any management system standard requires a new mind-set: systems thinking. Systems thinking is characterized by understanding how things influence one another within a whole. Traditional safety and health programs focus on individual parts. Z10, like other management system standards, emphasizes the interrelationships and integration of processes and business systems. For example, what do the results of an incident investigation tell us about our hazard recognition process or our hazard control process or employee involvement?

Systems thinking is also characterized by viewing problems as part of an overall system. Rather than looking for who is to blame or who caused a problem, identify the system deficiencies that led to the problem.

PS: What provisions does Z10 include for hazard and risk assessment and control?

James: The standard requires that hazards, risks, and controls be included in the planning process (Section 4.1). The process must assess impact on safety and health of OHSMS issues and the level of risk for identified hazards. Most importantly, the underlying causes and other contributing factors related to system deficiencies that lead to hazards and risks must be identified.

Section 5.1.1 requires organizations to establish and implement a risk assessment process(es) appropriate to the nature of hazards and level of risk. Section 5.1.2 requires organizations to establish a process for achieving feasible risk reduction based on the following preferred order of controls (hierarchy of controls):

a) elimination;
b) substitution of less hazardous materials, processes, operations or equipment;
c) engineering controls;
d) warnings;
e) administrative controls;
f) PPE.

Organizations must prevent or otherwise control the introduction of new hazards to an acceptable level by establishing and implementing processes for design review, management of change, procurement and contractor safety.

Finally, organizations must establish a process to identify, prevent, prepare for, and respond to emergencies.

PS: ASSE became the Z10 secretariat in 2012. How do you believe ASSE’s resources will benefit the development of additional Z10 standards?

James: ASSE has an excellent track record as secretariat for many ANSI standards. Our committee fully supported the transfer to ASSE and is enthusiastic about future prospects. Our committee and ASSE are committed to building a comprehensive support system to promote, market and assist organizations implementing Z10.

Companion publications, webinars, conferences and other potential promotional activities are being discussed.

PS: What are the Z10 committee’s plans and goals for the remainder of 2013?

James: Many committee members will deliver presentations on Z10 during chapter, regional, state and national meetings. Committee subgroups will work on various promotional activities.