SAFETY MATURITY ASSESSMENTS
Changing Your Leopard's Spots
By Alec Hart and Dominic Romano

Colorado Springs Utilities (CSU) is a utility service provider of electrical power, water, wastewater and natural gas. CSU employs more than 1,800 employees and serves more than 600,000 customers.

CSU is an enterprise municipal organization operating within the incorporated city of Colorado Springs, CO, neighboring communities and three unincorporated counties. The CEO serves at the direction of a utilities board, and has officers and general managers over each of the four service areas. The safety and health department is housed within the human resources department and works collaboratively with each of the four divisions to perform day-to-day case management, incident investigation, policy review, procedural development, employee training and facility auditing.

The World-Class Safety Challenge

As with any complex organization, OSH issues present a variety of challenges. CSU's existing safety and health programs are largely robust and succeed in reducing the organization's incident rates. However, fighting complacency and the normalization of deviance is an ongoing challenge. To help identify gaps in the organization's safety culture and advance safety beyond compliance-driven responsibilities, CSU initiated perception surveys and safety maturity assessments during 2017 in the energy services division. These surveys provided a platform from which to document various safety- and health-related markers within the organization and to begin addressing issues that stand between where the organization is and where leadership wants it to be. In other words, along with a facility auditing program, the surveys served as a tool of continuous improvement on the organization's journey toward world-class safety.

Perception Surveys

In this case, perception surveys are tools that provide measurable feedback from employees about an organization's safety and health programs. The process at CSU helped identify areas of strength and weakness within the safety programs as seen through the eyes of employees. The perception survey focused on four categories:

1) management leadership and employee involvement;
2) workplace analysis;
3) hazard prevention and control;
4) safety and health training.

The team worded the survey with positive statements relating to each area, and employees could respond with "agree," "disagree" or "don't know." Responses were confidential, however, respondents were asked to identify whether they were hourly or salaried (management), how long they have been with the organization and their work location. The team used this information to compare and contrast answers from other employees within specific work areas and between different work groups within each facility being surveyed. The analysis also identified areas of strength and areas of opportunity, and where strong agreement or disagreement existed between facilities and demographic groups.

The team analyzed each of the four areas for percentage of agreement and examined individual questions for both high and low levels of agreement. For the purpose of the CSU perception survey, questions scoring 90% or higher were listed as areas of strength, and questions scoring 79% or lower were listed as areas of opportunity. When comparing the two demographics, answers within 5% were considered to be in strong agreement, or high level, and answers more than 10% apart were considered to be in strong disagreement, or low level. When comparing three or more demographics, answers where the difference between the high and low score was within 10% were considered to be in strong agreement, and where the high and low scores differed by more than 15% were considered to be in strong disagreement. The analysis also looked at "don't know" responses as an opportunity to increase levels of communication or training. Questions that had excessive (greater than 25%) "don't know" responses in at least one demographic were noted.

Perception vs. Reality

The physical aspects of any safety program such as equipment and tool condition, housekeeping, or training documentation are easily identified and addressed through an audit. While CSU conducted a series of facility audits during 2015 and 2016 that successfully identified areas of improvement, the cultural aspects, or areas where management and line employees perceived safety and health differently, required using a different tool. The researchers found that cultural differences could be effectively measured using a safety maturity assessment. In application, safety maturity assessments consist of three distinct steps:

1) An initial employee perception survey: An organization-wide, high-level evaluation of perceptions related to safety. While these findings

TABLE 1

SAFETY MATURITY ASSESSMENT SCORING

Grade assigned	Numerical value
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0

are entirely subjective, they play a key function in allowing subsequent determination of significance and severity during later evaluations.

2) Facility audits: These were conducted to provide more objective, quantifiable data regarding safety. Additionally, these objective observations can be corroborated with the perception surveys to get a better picture of significance. For example, if an employee's perception is that safety is unimportant and that employee's workplace has evidence of poor housekeeping, there is a strong probability that his/her perception is reality.

3) Safety maturity assessment questionnaires: A representative cross section of employees was asked to complete individual evaluations. The information was collected from each participant and manually tabulated, then comments and numerical scores were entered into a spreadsheet for comparison and action identification.

Safety Maturity Assessments

Conducting a safety maturity assessment is a multifaceted, multistep process that begins with identifying an enthusiastic sponsor and ends with deeper commitment to safety from everyone involved. It allows each area to compare performance in all elements and measure the gap between where performance exists and the levels described in the attributes of excellence. At CSU, the energy services division general manager fully supported efforts to conduct employee surveys, perform statistical analysis and provide necessary follow-up required by this type of initiative. The safety and health department, in collaboration with other departments, generated detailed employee surveys to capture the data necessary for subsequent statistical analysis. This data analysis was required to effectively corroborate findings, identify gaps, and further identify program strengths, weaknesses, opportunities and threats.

The team identified 12 focus areas:
1) roles and responsibilities;
2) management leadership;
3) employee participation;
4) safety and health training;
5) standards and procedures;
6) hazard analysis;
7) assessments;
8) incident investigation;
9) safety and health data analysis;

10) occupational health and industrial hygiene;
11) safety recognition;
12) contractor safety management.

The team then developed a series of questions associated with four cultural areas. Questionnaires were distributed to multiple employees in each facility and the team documented employees' narrative responses. Based on employees' responses to each question, a score of zero to four was assigned subjectively by the safety representative, with zero indicating that the area/topic was considered weak, and four indicating that the area/topic was considered valued or strong (Table 1).

The four cultural areas included organizational defenses, employee behavior, job site conditions and leadership behavior. For example, the incident investigation questionnaire is associated with organizational defenses, as these practices help identify underlying causes so effective solutions can be developed.

The team calculated a grade for each element analyzed in the safety maturity assessment and used a common grading scale (Table 1) to generate a letter grade that is easily communicated and understood by the employee population.

Along with the numerical values, the narrative descriptions from employees allowed CSU to gauge the pulse of the organization and clearly see areas where employees felt programs or approaches were either effective or not well-received. The team summarized these findings and generated reports that allowed safety and health personnel, along with leadership, to evaluate the organization's safety culture and easily identify areas where weaknesses persisted or were perceived to exist. The team reported summary findings at leadership and safety committee meetings, with the clear message that

the assessment step was an initial effort to identify gaps and that the information collected would be used by the safety committees and task teams to implement safety program improvements and bolster the organization's safety culture.

The success of the energy services division pilot drove interest across the organization and additional divisions have begun conducting safety maturity assessments.

Conclusion

The three distinct steps of the perception surveys, facility audits and safety maturity assessment questionnaires come together providing three data points that allow safety and health practitioners to validate issues that are both real and significant. This is not an easy process, or one that can be wrapped up in a quarter or two. Safety maturity assessments take time, commitment and require long-term tracking and sharing results to be effective. While safety maturity assessments at CSU are still in progress, early results are encouraging. Following initial data mining and gap analysis for the two divisions surveyed, safety issues that can be easily addressed became obvious, and longer-term initiatives that require larger-scale involvement, longer-term effort or capital expenditures that need to be budgeted over time were revealed.

Behavior is difficult to control. Some may argue that you cannot change a leopard's spots. By tasking divisional safety committees and task teams with both short-term and long-term actions, and closely tracking early wins and long-term progress toward loftier goals, leadership at CSU is sending a clear message that not only is safety everyone's responsibility, but also that world-class safety is an achievable goal. **PSJ**

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