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Behavior-Based Safety in Construction

Purdue ECT Team
Purdue University, ectinfo@ecn.purdue.edu

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BEHAVIOR-BASED SAFETY IN CONSTRUCTION

THE NEED

In construction area, although safety problem has been recognized as an important issue, the number of fatal injuries is still increasing according to the data from Bureau of Labor Statistics. Recently, as an approach to safety problem, behavior-based safety programs began to be adapted in construction industry. Behavior-based safety approach that was introduced into the United States in 1930's and has been popular in manufacturing area since 1980's assumes that many of injuries and illnesses are the result of unsafe acts by workers.

THE TECHNOLOGY

Behavior-based safety is a proactive approach to increasing safety in the workplace and in the community. It is based on sound, research-based, and behavioral practices, and are easy to use with minimal training. In general, the process of applying behavior-based safety is:

- Identifying safety-related behaviors that are critical to excellent performance
- Gathering data on workgroup safety excellence
- Providing ongoing, two-way performance feedback
- Removing system barriers to continuous improvement.

The observation and feedback process provides visibility and control over upstream indicators of safety performance, namely, safe and at-risk behaviors(see Figure1).

FIGURE 1 BOP-X PROJECT SAFETY STATISTICS COURTESY OF BST

Using simple but effective observation techniques, employees periodically observe each other and then give appropriate one-on-one coaching feedback regarding safety-related behaviors. Observational data is collected and analyzed to identify areas needing special attention. It is then discussed in work teams to develop relevant intervention strategies. the behavior-based safety is focused on behavior. Behaviors are the proper upstream focus for safety for two reasons:

- 1 At-risk task-related behaviors are the final common pathway for almost all incidents.
- 2 Most at-risk behaviors common at a site are supported somehow by the culture of the site.

Taken together these two points convey an important message for conventional wisdom at all levels of an organization. In effect, Point 1 says, "Don't blame conditions alone;" and Point 2 says, "Don't blame employees." Stated positively, behavior-based safety engages personnel at all levels of an organization to reduce the rates of at-risk behavior and raise the rates of identified safe behaviors (Hodson et al. 1999).

What makes the behavioral science approach to safety unique is: (a) a reliance on information (data) gathering, (b) a focus on what people do for safety, (c) an emphasis on making decisions about safety successes and areas for improvement based on the data gathered, and (d) the inclusion of recognition for safety-related behaviors, instead of just penalties for at-risk behaviors (Boyce 2001). It is a process of involving workers in defining the ways they are most likely to be injured, seeking their input, and asking them to observe co-workers in order to determine progress in the reduction of at-risk behaviors.

THE BENEFITS

Benefits from applying this solutions are:

- Reduction of injury rates
- Reduction of workers' compensations costs
- Sustainability - compared to other safety programs that have a brief impact and then fade away
- Contributions to employee involvement, teamwork, morale, communications

STATUS

In 1996, KCI Constructors, Inc., a affiliate of Kellogg Brown & Root, adapted Behavioral Science Technology (BST®)'s behavior-based safety model while working on the Exxon Baytown Olefins Project Expansion (BOP-X) in Baytown, Texas. After getting the successful results from the project, Kellogg Brown & Root has expanded its use of behavior-based safety to new projects and ongoing projects (Hodson et al. 1999).

BARRIERS

The emphasis on behavioral safety may weaken the importance of eliminating hazards and controlling risks in workplaces. Managements' active and continuous efforts to reducing physical hazards should be

kept pace with the adopting of the behavior based safety programs. Construction projects change radically, and the workforce changes radically, not only with each project but during each project. In addition, the work environments vary with processes. This characteristics of construction projects may be an obstacle to applying behavioral safety programs that need certain length of time to educate management and workforce, gather data, assess results, feedback, and improve working behavior.

POINTS OF CONTACT

Behavioral Science Technology, Inc.

Phone: (800) 548-5781, <http://www.bstsolutions.com>

Safety Performance Solutions, Inc.

Phone: (540) 951-7233 Fax: (540) 951-0723 Email: safety@safetyperformance.com,
<http://www.safetyperformance.com>

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DuPont Safety Training Observation Program Web page <http://www.dupont.com/stop>
Safety Performance Solutions, Inc. Web site <http://www.safetyperformance.com/>

REVIEWERS

Peer reviewed as an emerging construction technology

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