Construction Behavioral Safety Observations – Planning, Pitfalls, and Performance Enhancement

Richard Baldwin, M.S., CSP
Corporate HSE Manager
PCL Construction Enterprises
Denver, CO

Mike Fallon, P.E., CSP, ARM
District HSE Manager
PCL Construction Services
Seattle, WA

Introduction

Behavioral safety observations have been widely employed in many industries, including construction operations, for a number of years. In the late seventies, Procter & Gamble was implementing an in-house program and by the late eighties, chemical plants and refineries were training supervisors and selected workers to conduct such observations using a set of defined critical behaviors. By the early nineties, observations were mandated by many of the larger and forward looking top companies. Often, consultants were used to initiate the systems and some of the well-known behavioral safety experts had, and still have, regimented programs that can be used in entirety or adapted to the specific industry, plant, or project. To be clear, Dr. Scott Geller's firm, Safety Performance Solutions, defines behavioral safety observations as:

> "A behavior based safety observation and feedback process provides visibility and control over upstream indicators of safety performance -- safe and at-risk behaviors. Using simple but effective observation techniques, coworkers observe each other and give constructive one-on-one feedback to reinforce safe work behaviors and discourage at-risk behaviors."

It is widely recognized that behavioral safety observations raise safety awareness and encourage workers to give feedback as they are observed. Unsafe behaviors are observed and recorded. Certainly, a critical element of the system is the positive reinforcement of safe behaviors performed. Historically, the construction industry has been stingy with its positive acknowledgements, so that when one is given, it has an incredibly motivating effect on the individual receiving such positive acknowledgement. Another important facet is the behavioral data that is accumulated and the resulting graphs and charts that show trends and lead to corrective actions.

Over the years, behavioral safety observations have evolved to one of the standard safety systems that are used in companies that are striving for zero incidents. However, only a few of the largest construction companies with clients in the chemical and refining industries have attempted to establish a behavioral safety observation system due to the transient nature of the workforce and, in some cases, cost constraints on construction projects that have "hard" bids.

This paper will identify the process that a leading construction company used to develop a behavioral safety observation system and attain proficiency in training observers, conducting observations, and establishing a recordkeeping system for analyzing observation trends. The authors have been involved with the development and implementation of behavioral safety observation systems in three construction firms and one petrochemical company during the past twenty years.

Recognizing the Need

In any company's effort to achieve zero incidents, all the incident prevention systems must be considered for implementation. And although it is now somewhat aged, the Construction Industry Institute (CII) Zero Accidents Task Force publication entitled "Safety Plus: Making Zero Accidents a Reality," still provides one of the most valuable guides to construction safety incident prevention systems. While we have long ago ruled out the existence of a "silver bullet," safety professionals will admit that some systems, such as behavioral safety observations, have very high value. If for no other reason, the day-to-day contacts between peers that are assessing safety increases awareness and decreases the likelihood of injuries.

Moreover, the reliance on incident data and inspection deficiencies to determine trends and subsequently develop action plans to improve safety performance has increasingly been viewed as only part of the solution, mostly because we are having fewer incidents and compliance with HSE requirements is steadily improving. To attain zero injuries, we must capture all the data and plan our continual improvement initiatives based on the combination of incident causes, inspection findings, and behavioral safety observations.

A growing number of long term safety professionals acknowledge a weakening connection between workplace injuries and inspection deficiencies. Rather, they focus more on worker behaviors as the key to reaching zero incidents, as it is those behaviors that create or allow undesirable conditions or practices to occur in the workplace.

In addition to more data, there is significant value in training observers to conduct the observations. Not only does the training sharpen their awareness of behavioral safety and the required safe work procedures, but the contacts that they make throughout the week as the observations are conducted serve to increase everyone's awareness and reinforce management's commitment to zero injuries. When experienced observers are replaced with new observer candidates, the overall safety awareness of the entire workforce is improved by increasing the number of observers, both those with the current role of observer and the previous group of observers.

Understanding the Required Resources

Instituting a behavioral safety observation system takes significant dedication, many work hours, and a commitment to funding all aspects. Prior to discussions with management about the

viability of the observation system, an estimate of the initial roll-out costs and the monthly costs of continuing the observations should be prepared.

Decision-makers must understand that implementing the system can be costly, particularly in terms of the time resource commitments. The time to train, conduct observations, record the results, complete trend analysis, and have periodic meetings with observers can be a burden that some companies or projects might not be willing to sustain.

Will Your Behavioral Safety Observations Have Value?

The decision to launch a behavioral safety observation system should be carefully considered. Initiating a behavioral observation system should not be undertaken until other safety systems are fully functional and effective. Thus one of the first steps in the process is to assess your other systems and, if needed, make corrections and enhancements as soon as possible. There are other considerations, such as:

- The employee population
- The duration of the construction project
- Subcontractor participation
- Client requirements
- Available resources

Without question, another vital consideration is senior management support. As with any other new safety system, management must be educated on the value of job observations and "sold" on the initiative. One of the best methods is to present summaries of literature on the subject from the experts such as Krause and Geller. The many articles written by Geller in ISHN are excellent summaries of the various issues that can arise during implementation. Managers must consider behavioral observations as an integral safety system, part of the complete process, just as they would regular worksite inspections or safety training. And the observation system should be viewed as a long-term, ongoing effort rather than a "program" that has a shelf life. And, without question, behavioral observations must be perceived as positive, employee-driven, and absent of discipline except in the event of deliberate offenses that have been defined as those which require termination. Observers should be prepared for some surprised reactions from workers as the construction industry has not been known for giving much acknowledgement or praise for safe work behaviors.

Organizing for Success

Once you have approval from management to proceed with a behavioral observation system, a time-phased plan should be developed. At this point, it is essential that safety professionals, managers, supervisors, and workers team up to establish the observation system. The involvement of the operations staff will aid in the initial roll-out and the necessary commitment for training on the projects and the time involved for the conduct of the observations. Planning for the rollout is critical because everyone in the company and especially on each construction project must know how it is to be implemented. Some companies have made the mistake of training workers to be observers without an accompanying training module for the supervisors of the workers who will provide the observers and be observed. It is essential that all within the project management and supervision ranks understand the system, the processes to be employed, and the resources needed so that they can unconditionally support it.

Developing the Observation System

As stated, a team approach is most effective. It is important to orient the team so they understand the basics of behavioral observations, concepts voiced by behavioral safety experts, and the options that other companies have used to establish their systems. The varying perspectives that the team will bring to the table will help ensure success and buy-in. When implementing behavioral observations, the process must be positive, employee-driven, and unrelated to the disciplinary process. Further, it must be completely without any mention or recordkeeping of the names of those observed. No names, other than the name of the person doing the observation can be placed on the observation card. It is also important to write an observation procedure to institutionalize the system and provide a document that can guide the workers and staff involved in the observation system.

Deciding on System Parameters

The team must also determine when a construction project will be required to implement the observation system. Some small projects with just a few workers may not benefit from the observation system because of limited resources and the likelihood of repetitious observations on the same workers, not to mention the limited application of the trends. Therefore, a threshold of 30-50 workers as an average population may be established. When there are fewer workers assigned, the observation system may not have value. Similarly, short duration projects, no matter how many workers are assigned may not benefit from an observation system. Projects of less than four months duration are, in some companies, exempt from initiating the observation system.

Determining the Critical Behaviors

A key element is determining which and how many of the critical behaviors that will be assessed during the observations. Most companies use a checklist-type card or sheet (See Exhibits 1 and 2) to record the critical behavior observations and generally derive their items from incident and inspection trend data. While some critical behaviors are specific, such as "Fall Protection," "Safety Glasses," "Ladder Use," etc., others are more general. Those would include "Line of Fire", "Body Position," "Eyes on Task" and "Rushing," for instance. And we might ask, "How many critical behaviors are appropriate?" Some companies have complex critical items checklists with more than 40 items and others have many fewer. The important aspect is not the complexity of the checklist, but the effectiveness of the trend analysis that results from capturing the data. Sometimes, trying to capture too many critical items can make trend analysis difficult because it is spread throughout so many behaviors that focusing on one or two trends will be impossible because of the lack of meaningful data.

CRITICAL BEHAVIORS

		Safe	At Risk	N/A
1.	Line-of-fire			
2.	Eyes on task			
3.	Body position			
4.	Hand position			
5.	Balance, traction or grip			
6.	Rushing			
7.	Use of PPE			
8.	Use of tools			
9.	Use of equipment			
10.	Work/task environment			

Comments:

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PCL

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PSI AUDIT

Project #: _____

		Adequate	Inadequate
1.	Task description		
2.	Hazard identification		
3.	Hazard controls		
4.	All sections completed		
5.	Initialed after breaks/lunch		
6.	Workers' names legible		
7.	Reviewed/signed by foreman		
8.	Muster/assembly point identified		
9.	Tools and equipment inspected		
10.	PSI at task location		

Comments:

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Name (please print): _____

Task Location: _____

Date Completed: _____

Time Completed: _____

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Exhibit 1: PCL Construction Enterprises Behavioral Safety Critical Items and Pre-Job Safety Inspection Audit Card.

PCL
CONSTRUCTION LEADERS

GRINDERS
OBSERVATION

Date: _____ Time: _____ Location: _____

Observation Team: _____ _____ _____
(Print Name)

Guideline for Grinders Observation
Guideline for the Observer:
☐ Introduce yourself to the worker(s)
☐ Explain the purpose of the observation to the worker(s). To solve safety problems.
☐ Ask them for their comments/input.

	Safe	Unsafe	Comments
A) PPE			
☐ Is the necessary PPE being worn?			
☐ Are boots, hard hat, and coveralls in good condition?			
☐ Is hearing protection being worn?			
☐ Are face shields being worn with safety glasses while grinding?			
☐ Is loose clothing exposed (i.e. Untucked shirt, loose hair?)			
☐ Are mono goggles being worn when grinding inside pipe?			
B) Housekeeping			
☐ Check area for flammables, tripping hazards, excessive material laying around, etc.			
☐ Are cords/cables rolled up when not in use?			
☐ Is spark containment required? In use?			
C) Inspection of Grinder			
☐ Is the handle and guard in place and in good condition?			
☐ Does the cord have any cuts or frays?			
☐ Are plug-ins in good working condition?			
☐ Does the grinder have the proper backing plate for the job?			
☐ Is the rpm rating of the disk higher than the operating speed of the grinder?			
☐ Is the guard positioned in such a fashion that sparks are directed away from the body?			
☐ Is the correct disk being used for the task (ie. cutting-zip disk)?			
☐ Is excessive pressure being put on the grinder?			
D) Special Safety Procedures			
☐ Did you receive work instruction from your foreman? (Was the job procedure explained?)			
☐ Was a pre-job Safety Instruction given?			

Question to be asked:
Does supervision/management need to address issues?

Exhibit 2: PCL Construction Enterprises Task-Specific Behavioral Safety Critical Items Card.

Selecting the Observer Group
Initially, managers that instituted behavioral observation systems trained and used only supervisors in the role. Over the last three decades, employees have increasingly been trained and designated as observers, and in some refinery and chemical plant operations, everyone is an observer and must complete at least one observation per week or in one case, one per day. In construction companies, it is common practice for one worker to be trained and designated as an observer from each construction craft, unless, on large projects with hundreds of workers, two or three workers may be trained as observers. Often, there is considerable controversy as to whether a member of a specific craft should do an observation on a worker in a different craft. Certainly there could be greater value if an observer trained as a welder does observations on other welders, but most observation systems train craft workers to look at other crafts.

Observer Training
No matter how many observers or whether they are supervisors or craft workers, training is vital and must include the following topics:

- A grounding in behavioral safety concepts
- An understanding that research has shown that 90% or more of construction incidents result from at-risk behaviors
- Why the specific critical behavior items were selected
- The overall purpose of the observation system – zero injuries
- When the observation system is employed
- Hazard awareness
- How to assess each critical item
- How many observations are required of the worker or supervisor
- Approaching the worker(s) to be observed
- Reacting properly to refusals to be observed
- When to stop the work and observation if the work is unsafe
- What to do if the worker refuses to work safely
- Hands-on practice and demonstrations of situations that can arise during the conduct of an observation

In nearly all observation systems, the observer will approach the worker or workers to be observed and explain that they are going to do an observation. However, some organizations do not solicit the worker's acceptance before making observations and simply make their observations without interrupting the worker. The reason for this is that some workers may be inclined to modify their behaviors when they know someone is watching them. In either case, it is important that the observer share with the worker his/her observations. But let there be no doubt that the preferred method is to announce the observation before it is conducted.

Workforce Orientation
Every worker and supervisor on a construction project where behavioral observations are conducted must understand that they are subject to being observed. Additionally, they must be trained to understand the reasons that observations contribute to a zero injury culture and management's expectations. Neglecting to orient workers and supervisors can lead to resistance to the conduct of observations and failure of the system.

Periodic Reassessment

Changes to your behavioral observation system are inevitable as it matures. Most likely, the critical items will be altered to reflect trends, or some companies may wish to expand the checklist after a trial period with the original version. This evolution of the checklist should be a desired action as it affirms the success of reducing or eliminating at-risk behaviors. Others have found that a critical items checklist that targets a specific construction craft or tasks such as steel erection, welding, or building concrete forms, for example, provides more information than the more general type. (See Exhibits 1. and 2.) Changes to observer training are also essential as the system is modified, and constant improvements to the data system that records and tracks the observations are expected.

Potential Pitfalls

Implementation of a behavioral safety observation system is not always without problems. The most frequent difficulty is caused by inadequate management support from all levels and unrealistic expectations for quick development. Sometimes, managers or CEOs read about the importance of an observation system and mandate it for their company, yet don't understand the commitment or the difficulty in achieving acceptance by supervisors and workers. And occasionally, a client or construction manager insists that observations be conducted and we react, but fail to be fully committed to the system. Observations cannot be instituted without through coordination among managers, supervisors, union representatives and workers. Other pitfalls are:

- Inadequate management support to sustain the system.
- Failure to involve supervision during the planning phase or train them during implantation.
- Inadequate training, especially in the conduct of the observation.
- Failure to enter critical item data for trend analysis.
- Simply failing to do the number of required observations.
- Ignoring the results of the trend analysis.
- Observers with negative focused critiques as opposed to a more positive affirmation.
- Observers with a negative bias towards other groups that manifests in the observations made.

Summary

When considering the implementation of a behavioral observation system in construction, carefully weigh the commitment that is necessary and the resources that are required. Thorough knowledge of behavioral safety concepts must be attained before the system is attempted and managers, supervisors, unions, and workers must be convinced that the system is of value in your setting. Further, it is important to remember that once the system is established, changes will be inevitable as improvements occur and the opportunities for improved data-gathering become evident.

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