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Construction

THANKS TO NEW SYSTEMS AND
TECHNOLOGY TO MANAGE SAFETY,
CONTRACTORS DON'T HAVE TO
REINVENT THE WHEEL

Plus

Employee Recognition

Training for Older Workers

Ergonomics and Safety

Using Technology to Improve Safety on Construction Sites

By putting systems into place to help manage the safety process on construction sites, contractors don't have to keep reinventing the wheel.

BY CARY USREY



Construction sites can be dangerous places. This isn't news to anyone who has walked through a jobsite or reviewed incident rates for the industry. This should not, however, automatically equate to an unsafe workplace.

A construction contractor's safety goal is to manage risk across a diverse work force while acknowledging the potential for devastating consequences. Unlike a fixed facility in general industry, each construction project is independent and unique, and projects often are managed by a central office that could be hundreds of miles away. In addition, the work force at each site is bid out and many of the workers

or foremen have never worked with the general contractor.

At times, it seems as if companies have to recreate the proverbial wheel to ensure all of the required safety policies and procedures are instituted and enforced. There are systems available that can help manage this process using the power of technology and predictive analytics to provide actionable information from the field to manage jobsite risk.

RECORDING SAFETY INSPECTIONS

When using technology to record safety inspections, safety professionals remotely can access inspections housed

in another location, such as a headquarters office. They also quickly and effectively can determine the observational patterns of a given individual, project, region or company, and then extrapolate against those patterns to predict future injuries and incidents. Multiple filters can be applied for the data, such as project/location and crew/contractor, as well as the individual inspector. Technology also allows safety professionals to track observations by specific conditions or behaviors.

Most companies have a process to record safety inspections. The challenge is managing the findings so companies can track and trend the data over time. The typical approach is to use paper cards or checklists to capture only unsafe observations. The observed issue then is fixed and the hard copy inspection is filed away in a file cabinet or a homegrown database, never to be seen or used again. This is referred to as the "whack-a-mole" approach. It is better than not doing any inspection at all, but a safety inspection process should be more robust in order for it to be truly effective.

Risk management involves analyzing exposures and then determining how to best handle at-risk behaviors and conditions. The best way to accomplish this is to have a com-



prehensive inspection strategy. When supported by a robust technology solution, this strategy takes into account at-risk conditions and behaviors across time, allowing for historical comparisons – a method to track progress on long-term corrective actions – as well as predict when future injuries and incidents will occur.

According to OSHA, a comprehensive inspection strategy entails a documented system for routinely scheduled self inspections of the workplace. This documented system includes a tool or checklist, an inspection schedule, hazard identification training, recording of findings, determination of responsibility for abatement and hazard tracking for timely correction.

RECORDING DETAILED OBSERVATIONS

Safety professionals who use technology to record detailed observations can benchmark leading metrics internally and externally, and measure where observations occur – not just by location, but also regarding who and what was observed. They also can measure and systemically improve the quality of the inspectors.

When recording findings, it is just as important to collect and record findings from safe observations as it is to record unsafe observations. Compliance officers typically have a saying: “If it is not documented, then it didn’t happen.”

Imagine a worksite manager being

cited for failure to have a fire extinguisher adjacent to hot work activity such as welding. The manager argues that inspectors look at this daily and have never found any issues. However, a lack of unsafe observations does not indicate there were observations of this activity. Recording safe observations creates documentation of a company’s productivity in relation to performing work safely.

In addition, the ratio of safe and unsafe observations can provide a great deal of context to an inspection. For example, if there are two subcontractors with five unsafe observations related to personal protective equipment, the tendency would be to treat them equally (or berate them equally, as is usually the case). However, if the first subcontractor had 200 workers exposed and the second subcontractor had eight workers exposed, the effective risk is vastly different and only can be seen through the collection of safe observations.

Lastly, by recording both safe and unsafe observations, companies then can analyze inspection data to determine where observers are focusing their attention. Many observers tend to focus on the “low-hanging fruit” of safety, including categories such as the wearing of hard hats and safety glasses, while focusing a small amount of their inspection activity, if any, on higher-risk activities such as fall protection or areas where the company has experienced claims.



Armed with detailed observations, inspectors can be coached and trained to focus on higher-risk activities. Safety professionals then could verify that the observations are occurring in places that will yield the biggest impact.

TRACKING CONTRACTOR PERFORMANCE

When using technology to track contractor performance, safety professionals also can ensure contractors have been observed during a given time period, quickly identify the most at-risk contractors and utilize historical data from contractors (specifically) and contractor types (generally) for pre-work safety instruction.

Another safety challenge in the construction industry is that most general contractors do not perform the work themselves. When an owner seeks to have a large-scale project built, a contractor often is hired to perform the necessary work. The contractor, however, rarely does the work alone. The work is performed by subcontractors, who are under contract to the primary or general contractor. Subcontractors might, in turn, hire their own subcontractors to do part of the work that they have contracted to perform.

Although each contractor performing the work is contractually obligated to adhere to health and safety guidelines, they may or may not be prepared to do so. When a subcontractor works in an at-risk manner, this directly affects the general contractor in many ways. This can include negative financial implications for the general contractor through enforcement citations, injuries and even litigation following an incident.

By tracking observations with the aid of technology, the ability to track and trend a subcontractor becomes much easier. The information can be used to provide direct feedback to drive continuous improvement. In fact, the historical data can even be used to qualify a subcontractor in pre-bid selection, thereby rewarding safe contractors with future work and eliminating poor performers before the work even begins.

The ability to conduct trending analysis leads to the next evolution of a safety program, which is to use predictive analytics in order to predict and then pre-

vent incidents before they occur.

I live in Florida, and there is a unique attraction in my area that has many alligators. A popular performance involves a worker sticking his head in an alligator's mouth. To me, this is an error-prone situation. The question is not if the worker is going to get hurt, but when. On construction sites, there are many workers exposed to similar risks; hopefully, they don't involve actual alligators!

By playing "whack-a-mole" and correcting workers' at-risk behaviors, but not addressing the initial factors that led them to work in an unsafe way, it is only a matter of time and luck before injuries occur.



During my time as a safety director for a construction company, we were investigating a terrible accident in which a worker fell from an elevation and was seriously hurt. Our company had a zero tolerance policy for fall protection, meaning workers were to be removed if observed not complying with the policy, even for the first offense.

Whenever a terrible accident occurs, people say it could have been prevented if only they knew about the risk. With that in mind, management reviewed the inspection data for the project and found that the safety manager had recorded eight previous instances of at-risk conditions for that subcontractor directly related to fall protection. At no point was any proactive action taken; nobody was removed from the job and no meetings with the subcontractor management were conducted. The safety manager



simply told the exposed worker not to do it again (and again and again).

By “fixing” issues as we see them without digging deeper to address the reasons why safety procedures and policies are circumvented, it is likely we will see this same behavior repeat itself until something is done to stop it – usually in the form of a catastrophic event. The worker will continue to stick his head in the alligator’s mouth if he feels the reward outweighs the risk.

Trending of this data and the use of predictive analytics will allow a company to determine if the event was a one-time occurrence or if it is a habitual issue. The goal then is to identify and address the at-risk exposures so as to prevent an accident from occurring, which may involve action beyond a simple fix with a Band-Aid.

SHARING COLLECTED DATA

Using technology to share collected data allows safety professionals to summarize and share data with key stakeholders – including employees, management, subcontractors and customers – through easy-to-interpret reports. They can automate reports to run on a recurring frequency, and implement real-time reports using current data.

Another way technology can aid safety professionals on a construction site is by allowing timely communication. As inspections occur and data is collected, an organization can roll this data up into reports that are actionable at all levels of the company. For example, management can use the data to drive accountability; the safety team can use the data to provide necessary resources such as training and coaching; and inspectors can use the data to know which subcontractors have been inspected, as well as review what areas of risk have been observed and which ones need additional focus. In addition, this data can be provided to the subcontractors so they know what areas require immediate attention and improvement. Finally, information can be provided to a contractor’s end customer, who often is the most important stakeholder. Many property owners are making increasing demands for the reporting, monitoring and active management of workplace safety risk.

The herculean task of construction

safety is gaining transparency and visibility into multiple, diverse projects scattered across a large geographical area. The larger the construction company and the more data that is collected, the harder it becomes to manage this process.

Identify and address
at-risk exposures to
prevent accidents.

Using a shared technological system to gather data, analyze it and then disseminate the information derived from it is not only a good idea, but critical to truly protecting workers. Through a process involving the collection and review of data and subsequent feedback relayed to the appropriate end users, companies can set safety standards and expectations. Using predictive analytics, contractors even can identify issues before they occur.

Ask yourself this question: When considering the need to incorporate modern technology into your safety process, why investigate injuries when you can prevent them? **EHS**

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