

The Value of Safety in Construction

Putting Safety First

Job and Product Safety

There cannot be too much attention given to the importance of making Safety a core value at your workplace or jobsite. Safety programs, standards and equipment have advanced over the years. However, increasingly compressed schedules and a drive to reduce costs, causes construction and workplace safety to be even more critical in today's construction projects than it was when OSHA was established in 1970.

And, if your construction project is an expansion or retrofit of your existing production operations, product safety concerns also enter into consideration. So, while it is understood that product quality and safety are paramount, are you confident that your next facility project will maintain best safety practices to protect your investment? How about your employees, visitors, workers and construction crew working on your property and around your equipment?

OSHA standards require employers to provide a safe workplace for their employees through facility design, hazard control, training and personal protective equipment (PPE). Facility design and construction must consider and incorporate all appropriate OSHA regulations through all stages of the project. Designers, contractors and facility managers all need to closely collaborate on facility projects to ensure that safety standards and OSHA, EPA, FDA, USDA and other regulations are supported and correctly implemented.

Concerns such as employee accidents or public backlash due to faulty or tainted product caused by unsafe design or construction practices are issues facility managers and contractors both want to avoid. Compressed schedules, saving costs, quality workmanship and inexperienced and/or safety complacent workers are all issues that exist and must be mitigated every day on every project. To prevent disasters, everyone involved with the project must consider safety on the same level as quality, cost and schedule. Safety must be the foundation of every project decision.

When it comes to safety in construction, there are two key aspects to consider: "contractor considerations" which include project, construction and worker safety; and "Owner considerations" which include product, employee and public safety. Here, various processes and standards for greenfield sites and existing facilities are discussed from both contractor and Owner perspectives. This whitepaper includes best practices recommended by The Austin Company to consider when initiating your next facility project. Read on and let us help you complete your next project with Safety as a top priority.

Contractor Considerations

Site Level

Safety considerations for contractors begin at the site level. Contractors must clearly understand the Owner's site requirements and incorporate them into the project safety, security and operations policies. This involvement and understanding must be comprehensive, done in close coordination with the Owner. Also, communication across all levels, throughout all stages of the project is key to a successful project completion. The contractor and Owner must both

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understand what each other are doing at all times, as each will affect the other during the course of the project implementation.

The contractor, in close coordination with the Owner, must provide safety training to their employees working on or around the jobsite. The training should cover site policies, security issues, safety protocols, required documentation and potential site risks, along with construction safety practices. Training should ensure that workers understand their interaction with production and the mitigation strategies implemented if construction is taking place around an active facility. Only after successfully completing this safety training, should a worker obtain site access. What a worker does not know can not only hurt him/herself, but can also potentially hurt other workers, Owner's employees, customers, vendors, property and equipment.

The site level safety and environmental situation for each different type of facility should also be considered. Companies may need differing levels of safety controls within an existing facility, including controls for:

- Procedures, especially tie-ins to existing systems
- PPE
- Tools and materials
- Construction access
- Process flows

Special procedures will be necessary to keep construction separated from production, and site workers must understand the unique challenges that each project presents. Experienced contractors will possess a unique knowledge of the safety and Owner protection requirements involved across a wide variety of scenarios.

Project Level

Best practices for project level safety include development of a Site Specific Safety Plan, with both a project level safety analysis and hazard analyses for each significant task.

The **project level safety analysis** should consider hazards both inside and outside the construction zone. For renovations to existing, active facilities, this includes coordination of shutdown issues, utility usage, handling of material and equipment deliveries to the project site, and Owner operations. For example, fresh product or ingredients in a food processing facility that are stored or located near the construction area may be unknowingly exposed to airborne dust particles and contaminants or changes in temperature and humidity. While the product may not be directly visible from, or located within the facility, it may still be impacted by the work taking place. In addition, construction coordination with the Owner is necessary regarding disruption of utilities, such as HVAC systems, that would impact Owner operations and adversely affect production and inventory. Experienced contractors are able to adjust by installing temporary walls, barriers, HVAC filters, ventilation and other methods to prevent costly disruptions. Close

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coordination with the Owner's plant engineering and maintenance personnel is essential to mitigating these risks.

In active facilities governed by FDA requirements, all associated parties must identify validated systems affected by the construction activity. Those requirements often drive the development of a temporary and/or special sequence of operations for the Owner as well as the contractor. This includes all processes from raw materials through final product distribution. The contractor must schedule the activities and coordinate each phase with the Owner and subcontractors prior to construction taking place to maintain product and operations integrity. By completing a project level safety analysis in advance workers become aware of the potential hazards around them, even if not immediately visible, and can plan and respond accordingly.

Project level hazard analyses involve reviewing the major tasks taking place within the project. The hazard analysis identifies the steps required to complete the task, associated hazards identified for each step, and the controls to be implemented for those hazards. The analysis also defines what hazards are related to the workers, existing operations, facility and equipment. This analysis is reviewed with workers and subcontractors as they begin each phase and is a proactive and rigorous approach to ensuring that safety measures are planned, understood by the workforce and put into practice for each activity. A hazard analysis enables the entire work crew to understand the hazards associated with the tasks they will be performing and the safety procedures required, so those hazards can be mitigated for safe work completion. Both the project level safety analysis and hazard analyses should also include a review of any needed OSHA training and examination of the project location.

Weekly **Toolbox Safety Meetings** are further used to provide ongoing safety training to the workers and collect worker feedback. This brief, ten minute, weekly investment in safety provides an opportunity for everyone to stay involved in the safety program. Toolbox meetings should also include discussion of any site issues or incidents that have occurred or may come up on the project, in addition to project activities that pose a significant risk to personnel or product safety and integrity. The tone of these meetings must encourage all workers to be "stewards of safety" as it relates both to personnel and product. For example, if workers see a temporary barrier has been damaged, it is their responsibility to immediately report it and make sure a repair is imminent.

Task Level

The task level safety analysis on any site is a proactive, daily approach to planning for a safe workday. All levels of workers on the project are reminded and asked to start the day "working safely" through participation in a brief, three-to-five minute **Daily Safety Huddle** prior to starting work. The Daily Safety Huddle emphasizes safety hazards, coordination with others and required procedures for that day's tasks.

At the task level, job safety hazards are identified, safety issues from the prior day are reviewed, and the group discusses what they are doing and how they plan their safe work day. With active facilities, special consideration is given to issues related to adjacent operations, specific tasks

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such as demolition and contamination, and their potential hazards. Any Owner safety permits for the day's activities should also be reviewed with the crew.

Daily Safety Huddle forms are completed and kept as part of the project's ongoing documentation and safety record. The form may contain checklist items, such as:

- What permits, signs, barricades and/or guarding may be necessary prior to starting certain tasks
- What training or certifications are required prior to doing certain tasks or operating certain equipment
- What PPE and emergency equipment is available should it be needed, and where it is located
- What the potential hazards are for the day's tasks and work location and how they will be controlled
- Instructions and contact information for employees to use should they find themselves in an unsafe situation or identify a new hazard

Best practices also include coordination between the Owner, contractor and subcontractors for required training, documentation and procedures, such as "hot work" permits and "lock out--tag out" programs.

Owner Considerations

Product and Public Safety Issues

In an existing, active production environment, it is crucial to understand the production process in relation to construction requirements in the same space to protect the people, products and property. The whole jobsite should be regularly reviewed for any hazards that could potentially cause product damage or contamination, product manufacturing disturbance, production delays, degrade ingredient lifespans and quality, or any other issues that could possibly harm the Owner's product quality or reputation.

Physical separations between areas and work-arounds implemented in existing utility systems can allow processes to continue in a protected environment, while construction takes place in an isolated work area. In addition, the Owner must closely monitor product backlog, so that product availability for public use is not affected as a result of shutdown or contamination issues caused by construction in an active facility.

Selecting a Contractor

Ultimately, the key to an effective safety program is to hire the right people. This is not the place to risk hiring inexperienced contractors and vendors because they are less expensive. One misstep by a contractor who is inexperienced in active facility construction can result in production line shutdowns, contaminated product and even FDA actions against the Owner.

The Owner must start the contractor selection process by evaluating experienced, safety-conscious general contractors and vendors. This can be done on a basic level by looking at the contractor's OSHA "Total Incident Rate" (TIR), which defines injuries per work hours for the year

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and their “Experience Modification Rate” (EMR), which is the number used by insurance companies to help calculate Worker’s Compensation premiums. For both rates, lower numbers equate to better safety records; although it is critical to also review experience as it applies to the specific site and project. The TIR can be compared to the Bureau of Labor Statistics (BLS) injury rates for contractors with the same North American Industry Classification System (NAICS) code, who perform similar types of work. The EMR uses contractor injury claim costs from a three-year period, comparing them to costs for other contractors with the same NAICS code. An EMR of 1.0 represents the national average for that trade. A lower EMR results in lower Worker’s Compensation premiums for the contractor, also resulting in lower project costs and potentially lower risk. Owners can also research contractor’s past OSHA citations on the OSHA website to determine if a contractor has a history of non-compliance, indicating higher safety risk. A large number of violations or any ‘Repeat’ or ‘Willful’ violations should raise a red flag.

Contractor experience and a strong safety program will generally result in lower TIR and EMR values. If numbers are high, ask for a detailed explanation. The contractor must ultimately hold an interest in protecting the Owner and have their best interests in mind while completing the project. In addition, the general contractor, as the “controlling contractor”, holds the responsibility for sub-contractors and their employees, so qualified contractors are motivated to hire the best and most appropriate workers for the project.

Contractor evaluation should also include contacting previous Good Manufacturing Practice (GMP) client references for the contractors. Discuss not only how their projects turned out for cost and schedule, but also how the contractor interacted with and impacted production activities. Did the contractor work closely with the client to avoid production interference?

Applying the Jobsite Safety Program

For both contractor and Owner, a delicate balance of compliance, positive reinforcement and discipline are required to successfully implement the jobsite safety program. Crew members will not solely respond to forced safety messages and requirements, but when messages and actions become, “Do the right thing, because it is the right thing to do to protect yourself, others and the client,” safe attitudes and behaviors begin to take hold. Compliance with the jobsite safety program should be the number one goal. While in some cases non-compliance may result in termination based on the offense and related details, non-compliance is also an opportunity for further coaching and development of a culture where safety is engrained in all decisions, at all levels.

When implementing the safety program, all crew members should be trained not only how to be compliant, but also how to recognize, report and correct hazards or unsafe practices. All crew members should be in the habit of looking out for hazards at all times, as well as during daily inspections. Enabling and empowering workers to identify these types of situations before they become a significant issue can help protect everyone involved. Crew leaders must be responsive to any reported issues and near-misses and follow through immediately with investigation and

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reporting of the hazard to the Owner. Crew leaders must also quickly determine and implement appropriate corrective action.

Construction safety is a serious matter that has the potential to become significantly magnified if or when breaches in safety or exposed hazards impact public health. It is one thing to have all safety issues properly documented and discussed, but it is another matter to truly implement a culture of safety that all workers embrace. By utilizing the tools described above and by making everyone accountable for upholding safety standards and by empowering workers to be proactive, a strong safety culture is developed. Taking the appropriate proactive measures to instill a safety mindset, with the necessary time and resource commitment, will prove to be a worthwhile investment for your organization.

Finally, it is important to remember the depth of experience that comes with years of training. That experience, combined with a culture of safety, and Ownership of the project, can result in a well-managed, organized and safe jobsite and successful project completion.

The Austin Company

Uncompromised Safety and Quality

The Austin Company maintains and strongly encourages a culture of safety across all projects and offices, and has long been known for our distinguished Safety Record within the construction industry. Austin prides itself on our formal Jobsite Safety Program, which includes jobsite safety training, jobsite signage, hazard evaluation, task planning, weekly and daily inspections, safety meetings, and employee participation. Our commitment to uncompromised quality and safety on the job is reflected by the numerous safety awards and certifications we receive each year. Austin receives awards of excellence not only for our Safety Record, but also for our proactive efforts in accident prevention. This commitment allows us to maintain our safety ratings below industry standards in our industry and repeatedly complete complex GMP projects within schedule and budget constraints.

To Learn More:

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