SeaBRIGHT INSURANCE COMPANY

Supervisors' Safety Update

Ideas and Strategies for Leaders

SSU 2003-07

CONSTRUCTION SITE SAFETY MANAGEMENT

By SeaBright Insurance Loss Control

OSHA has maintained a compliance and consultation focus on the construction industry for many years…and for good reason. While the industry has been working hard to improve safety and reduce employee injuries, they continue to be one of the leading industries that injure or kill more people at work. One area that both OSHA and construction safety professionals have found missing when serious incidents occurred is the lack of an implemented jobsite level pre-project planning process. OSHA once stated that construction contractors with high injury and fatality rates tend to lack a solid plan for the sequence and methods of their construction. A construction safety analysis, performed by qualified persons prior to the project and during major project phases, is the key to this safety planning process. Without an overall pre-job plan, the potential for unplanned delays, unanticipated costs and possible employee injuries is increased.

The importance of pre-job safety planning for construction projects is covered in the Supervisors' Safety Update (SSU 95-05), entitled *The Pre-Job Safety Planning Process For Construction Sites*. In that issue, critical aspects of pre-job safety planning were defined, including:

- Conducting a project safety analyses to identify major and unique hazards and provide a foundation for the project safety plan;
- Assuring that the safety budget is included in the original cost estimating phase;
- Carefully screening subcontractors during the bidding process and defining safety performance criteria;
- Assuring that all subcontractors have a written safety plan that covers all their risk exposures;
- Holding pre-job planning meetings with key field personnel—both general and sub contractors.

This month's Update will focus on operations that follow the pre-job phase of a project, move into the construction phase and progress all the way through to completion. Ongoing site safety management must be carried out to ensure the safety of all construction workers, as well as to control project costs and the successful completion of the job. This is the responsibility of the "field manager," who may be a superintendent, supervisor or foreman, depending on the size and stage of the project. Several project phases and operations deserve consistent attention:

PRE-OPERATION HAZARD ANALYSIS

The pre-operation hazard analysis takes a close look at specific work phases about to get underway. The industry has learned that a Job Hazard Analysis (JHA) is an efficient way to identify specific hazards prior to beginning each operation. The analysis helps determine what safety measures are necessary, which safety equipment must be acquired and when special employee training will be necessary to control the risks. A sample JHA form (also sometimes called a JSA or "Job Safety Analysis") is included at the back of this issue.

Now is also the time to review exactly what each crew, contractor and subcontractor has planned for the control of known hazards. All plans should be compared to see if there would be any conflict during unusual or potentially troublesome work. If a subcontractor is already on the job, but has not prepared a written analysis of potentially hazardous conditions, it is not too late to do so. A meeting at this time can assure the field manager that all crewmembers are protected, rather than having to scramble at the last moment to get safety equipment or change the schedule.

FOLLOW-UP INSPECTIONS

Follow-up inspections should focus on whether or not site-specific safety plans and hazard analyses are adequate. The first inspection should take place shortly after each phase of work has begun, to determine if the JHA is being followed, if conditions have changed, or if conditions are not as depicted in the plans and specifications. Once a changed condition has been noted, a new hazard analysis should be completed. Subcontractors involved with the change should attend a meeting, bringing their own revised safety plan and JHA for review.

MONITORING OF SUBCONTRACTORS

Monitoring the safety performance of subcontractors is one of the most important duties of a construction manager. This means assuring that the subcontractor is in compliance with all safety standards and is *following* the safety plan their firm submitted. This may require an inspection of their operations on a daily basis. Areas that should be monitored include:

- Reviewing new employee orientations to verify that they are adequate and are being conducted for everyone hired;
- Monitoring supervisors' enforcement of safety policies. Requiring documentation which shows that disciplinary action for non-compliance with safety rules is being taken, such as filed notes regarding warnings or suspensions;
- Monitoring the use of personal protective equipment, to make sure the equipment being used provides adequate protection and that workers are trained to use it properly;
- Reviewing daily inspection reports to determine if corrective action is assigned and completed. This can be accomplished by having subcontractors provide you with a copy of their reports;
- Reviewing the thoroughness of accident reports. The "root cause" on the incident should have been determined and steps taken to prevent reoccurrence of a similar incident.

ONGOING HAZARD INSPECTIONS

Both formal and informal safety inspections on a construction project are valuable. All levels of personnel should be constantly alert for potential "accident makers" in the ever-changing construction environment. But it is a mistake to rely upon informal inspections only. Checklists not only increase the likelihood that hazards will be identified, but formal records of such activities can be critical during regulatory or legal challenges. SeaBright Loss Control can furnish a variety of sample inspection checklists for different operations.

The following list of items does not cover every possible hazard to be found on a construction site. Most firms need a collection of customized safety checklists for different types of projects. Our intent is to help site safety managers remember common, potential risks that are frequently *overlooked*. Hazards and conditions to be inspected have been grouped within four basic phases of construction:

Mobilization

- ☐ Are contractors' and subcontractors' trailers arranged to allow smooth traffic flow?
- ☐ Are materials and trailers blocking access to fire hydrants, pumps or other emergency equipment?
- ☐ Has the Fire Marshal / Fire Department reviewed the site for accessibility?
- ☐ Are material lay-down areas clear of any overhead power lines?
- ☐ Does any aspect of the job interfere with public access, roads, railroads, or adjacent private businesses?
- ☐ Do stairs to trailers have handrails and platforms when there are four or more risers?

Site Work and Utilities

- ☐ Is all equipment inspected as it arrives ? Do all systems function properly?
- ☐ Do all vehicles have backup alarms, first aid kits, fire extinguishers, seatbelts and roll over protection?
- ☐ Has a traffic plan been prepared to assure that the public is kept away from hazardous areas?
- ☐ Are signs posted, flag persons in place and pilot cars ready?
- ☐ Do surveyors, soils engineers, and workers in traffic areas have high-visibility reflective vests?
- ☐ Have utility companies been contacted and have utility location lines been well marked?
- ☐ Has dust been controlled adequately and street cleaning equipment organized?
- ☐ Has an adequate traffic plan been prepared for mass excavation/fill, or work on existing roads?
- ☐ Are excavations over 4 feet deep adequately sloped or shored?
- ☐ Are all spoil piles at least 2 feet from the edge of any excavation?

Structural and Architectural Work

- ☐ Have re-bar stub-ups been protected by caps or dams to protect workers from being impaled?
- ☐ Are workers who climb and tie wall reinforcing steel using a full body harness and lanyard for fall arrest, as well as positioning hooks for fall restraint?
- ☐ Are steel erectors using a 100% tie off method?
- ☐ Is the crane and work area roped off, and signs posted to prevent workers from walking beneath a load?
- ☐ Has the crane's counterweight swing radius been flagged, to keep personnel out of the hazardous area?
- ☐ Are extension ladders extended 3 feet past the landing and secured in place?
- ☐ Are stepladders used as intended--not as straight ladders?
- ☐ Are workers trained to *never* stand on the top 2 steps of stepladders?
- ☐ Are guardrails installed around all leading edges with a fall potential of 6 feet or more?
- ☐ Are holes and openings in floors or decks guarded or covered properly?
- ☐ Does scaffolding systems have a ladder or stair system attached for access?
- ☐ Is the entire scaffolding work area fully planked between the front uprights and the guardrail supports?
- ☐ Does all working platforms and scaffolding have handrails, mid rails and toe boards?
- ☐ Are enclosed work areas monitored for carbon monoxide if propane fueled heaters, personnel lifts or forklifts are being used?
- ☐ Are protective guards on all powered hand tools in-place, working properly and not disabled?
- ☐ Do radial arm saws have an automatic retraction device and brakes?
- ☐ Do table saws have blade guards, anti kickback dogs and kerf splitters?
- ☐ Do pneumatic nailers have safety feet?
- ☐ Are personal tools regularly inspected to ensure their safe condition?

Mechanical and Electrical Work

- ☐ Is there an assured grounding program or GFCI system in place?
- ☐ Are GFCI's used on all cords that will be used for power tools?
- ☐ Have all energized electrical panels been guarded and labeled to protect workers from energized busses?
- ☐ Are extension cords suspended above the ground to avoid tripping hazards?
- ☐ Is general lighting and work lighting adequate for the work being conducted?
- ☐ Are fire extinguishers on site, properly mounted and easily accessible?
- ☐ Are compressed gas cylinders stored upright, restrained, capped and adequately separated?
- ☐ Are guards installed on portable grinders with a minimum of 180 degrees of protection?
- ☐ Do cutting torches and propane tanks have back flow preventers installed?
- ☐ Are ultra violet shields set up in areas where welding operations are near other workers?
- ☐ Is there adequate ventilation in areas where welding and cutting will take place?
- ☐ Are all pressure tests (pneumatic, hydro testing, etc.) pre-planned to reduce exposure to workers in the area?
- ☐ Are signs posted to indicate a test underway?

SITE SAFETY MANAGEMENT IS A CHALLENGE

While nearly every project is different and work environments change every day, site managers are challenged to stay on schedule and at the same time keep workers free from harm. Some hazards are the same for every project, but usually, the site location, the terrain, the weather, the management team, and the experience of the workforce dictate new safety challenges. These are obviously some of the reasons why accident and injury rates are higher in construction than for most other industries. It's also why federal and state OSHA regulators *target* construction for focused inspections.

Whatever the area of construction—commercial, industrial, marine or shipyard—formal, documented pre-project planning and site safety management systems are "blueprints" for success. Companies that follow them tend to have fewer accidents and injuries, lower insurance premiums, fewer safety citations, and the best reputations for quality management around!

SeaBright Loss Control can provide sample inspection checklists, job hazard analysis guidelines, and other resource materials to help strengthen your firm's construction safety management system. * * *

JOB HAZARD ANALYSIS

JHA#	Job Title	Page
Date	Title of Person Doing Job	
New Revised	Company	
Location	Department	Supervisor
Analysis By	Reviewed By	Approved By
Required / Recommended Personal Protective Equipment:		

JOB STEP	POTENTIAL HAZARD(s)	SAFETY PROCEDURES	SAFETY EQUIPMENT