UNGER
CONSTRUCTION CO.

Proof of Training

Print name: _____Signature: _____ Date: _____

Removal of Conduit

Purpose

To establish appropriate expectations and safe work practices when removing conduit.

Scope

This policy will apply to all work performed by employees and subcontractors including, but not limited to the following activities: construction, installation, demolition, remodeling, relocation, refurbishment, testing, and servicing or maintenance of equipment or machines.

Objective

Due to the potential for serious electric shock injuries and/or significant business interruptions, specialized work techniques are required to remove, relocate, demolish or otherwise change the position of conduit. Conduit being defined as: metallic, intermediate metal conduit (IMC), threaded, rigid, metal clad, nonmetallic, flexible metal, liquid tight, non-metallic sheath, polyvinyl chloride (PVC), high density polyethylene (HDPE), wire mold, cable trays, race ways, wire ways and other forms of electrical cable or life safety systems tubing management.

Responsibilities

Management (Board of Directors and Project Managers)

Management is responsible for ensuring that the materials (e.g., tools, equipment, personal protective equipment) and other resources (i.e., worker training materials) required to fully implement and maintain this program are readily available where and when they are required. Additionally, management will monitor the effectiveness of the program, provide technical assistance as needed, and review the program bi-annually.

Program Manager

Dave Simpson is responsible for the development, documentation, training and administration of the program. This position carries the responsibility of insuring this program is adhered to and that proper reporting is executed.

Supervisors (Superintendents and Foreman)

Supervisors are responsible for ensuring that a task specific job hazard analysis (JHA), also known as a safe work plan, is developed. The JHA will select, implement and document the appropriate site-specific control measures as defined within this policy. Supervisors will direct the work in a manner that ensures the risk to workers is minimized, adequately controlled and that practices defined by this policy will be

followed. Supervisors are responsible for ensuring Unger Construction employees and subcontractors are following expectations. Supervisors will be held accountable for enforcing the requirements of this program. Undesirable behavior will not resolve itself, therefore supervisors must be directly involved with modifying behaviors inconsistent with program expectations. Supervisors will be held accountable for enforcing Unger Construction's disciplinary program.

Workers (Employees and Subcontractors)

Unger Construction has high expectations and requires safety excellence for each employee, crew, project and for our entire company. Workers are required to follow the minimum procedures outlined in this program. Workers are responsible for knowing the hazards and the control measures established in the JHA. Workers are responsible for using the assigned PPE in an effective and safe manner. Workers are responsible for stopping unsafe acts and correcting unsafe conditions on the spot as soon as they are discovered. Any deviations from this program must be immediately brought to the attention of your supervisor. Workers that choose to conduct themselves in a manner that is inconsistent with these expectations will be held accountable for those decisions and may incur disciplinary actions.

Hazardous Material Survey

Unger Construction requires hazardous materials surveys before demolition or renovation work begins. The survey shall include all of the following: A visual inspection of a facility or a portion thereof for suspect materials, sampling and laboratory analysis of any suspect materials found for the presence of asbestos. The hazardous materials survey will also furnish a written report that includes: a description of the area(s) visually inspected, a detailed description of any suspect material sampled, the results of any laboratory analysis of suspect materials, the method of analysis, and the total amount of asbestos containing material. Typically a floor or roof plan is included with the report to reference the written information visually.

The person conducting the survey must be certified pursuant to OSHA and/or EPA regulations. The survey may be performed by a certified Site Surveillance Technician (SST) under the supervision of a licensed consultant. Note: The survey may be performed by a certified Site Surveillance Technician (SST) under the supervision of a licensed consultant. Note: The survey needs to be kept in a project file so that it can be accessed when working on future projects.

If lead or asbestos have been confirmed to be present employees and subcontractors must follow Unger Constructions Lead and/or Asbestos program. If hazards such as asbestos or lead will be disturbed during remediation, a properly licensed professional must perform the work and follow appropriate regulations.

Job Hazard Assessment (Safe Work Plan)

Unger Construction utilizes JHA's as our means of hazard assessment and establishing a safe work plan. JHA's are performed by supervisors and/or workers. Our library of hazard assessments is maintained on the "S" drive. Before beginning a new task refer to the JHA library, generally speaking all scopes of our work are covered. For situations that have not yet been covered select one that is substantially similar and use it as a baseline. JHA's on the "S" drive are organized by work area and job description. JHA's include strategies for elimination, substitution, engineering and administrative controls. After applying all appropriate reduction and elimination technique, the remaining hazards will be analyzed and the

proper PPE to reduce the hazards will be selected. PPE will be identified for hazards that are in the process of being reduced or eliminated and/or when hazard-reduction efforts are not 100% effective in eliminating the hazards.

For complex or moderate to high hazard tasks, tasks where an additional level of safety planning is needed, the safety director will perform the JHA with the supervisor and workers.

Training

Before any employee is allowed to perform work removing conduit they must first receive training. Each employee must demonstrate an understanding of the required training to their supervisor, before being allowed to perform work.

Proof of training is available on the "S" drive. The training data base can be sorted by employee name or by subject. This ensures supervisors and employees are able to confirm they have the necessary training and if they don't which employees do. Employees that need training should contact their project manager or superintendent to make arrangements for them to be trained.

Retraining

The need for retraining will be indicated when: an employee's work habits or knowledge indicate a lack of necessary understanding, motivation or skills required, new equipment is installed/purchased, changes in the workplace make previous training obsolete, or upon a supervisor request.

Discussion

Working with conduit is a high hazard activity in which all risks must be identified, and controlled. Unger Construction has strict requirements with respect to cutting electrical conduit. Specialized work techniques are required and safe work practices will be accomplished through the following steps.

Planning the Task(s)

The entire operation will be pre-planned involving the Unger project manager, all persons supporting the operation (e.g., facilities technicians, the owners of the building), other trades persons who will be performing the work.

Use of layout, as-built, isometric, or line drawings of the conduit to be removed is required for safe and efficient planning. In some cases, a field drawing prepared just prior to the work may be needed to capture the actual equipment configuration and panel schedules. (Services may have been added or changed since the last formal drawing was prepared.)

The conduit should be 'walked' by all parties associated with the operation to allow full assessment of the scope of the work, and to identify potentially difficult situations (elevated work, restricted access, need for supplemental lighting, conflicts with normal travel paths etc.), and hazardous energy lockout points. Demolition tags or flags must be attached to the conduits that are being removed.

Any intended work that does not appear to be safely feasible within the requirements of this policy must be referred to the Unger project manager for discussion and approval of alternative methods.

Performing the Task(s)

Conduits cannot be removed until all of the conductors have been removed from within the conduits. Conductor removal requires strict adherence to Control of Hazardous Energy (lockout) procedures. Lockout devices must remain in place until all work is complete and the system is ready to return to service. With respect to demolition of electrical circuits, the lock out device must remain in place until the conductors have been removed from the circuit breaker and the panel schedule updated to read "spare".

All conductors or tubing must be completely removed before any section of conduit is separated and prepared for removal.

Prior to starting the conduit separation a second set of eyes (independent confirmation) must confirm that all conductors or tubing have been removed.

Conduits cannot be demolished until all signatures are affixed to the demolition tag or flag.

All conduits must be separated at the coupling or junction, piece by piece, section by section.

Once the individual pieces or sections have been physically removed and brought to the ground or floor level they can be cut into manageable lengths, typically no longer than 8 feet in length.

Where cutting in place is required, the conduit first must be pulled out away from any other interfering lines or services to avoid damaging those items. The conduit in question will have to be released from its clamps and positioned outside of the rack or support structure such that the probability of an accidental or unintentional cut to neighboring lines is zero.

Check clearances 360 degrees around the point of work. Place high visibility flags or supplemental shielding on nearby lines or items of concern so workers can clearly distinguish items in the proximity, which should be avoided.

Have 3-dimensional awareness of the point of work. Identify any energy sources where you are working that might be affected by the work (e.g., cutting into a nearby gas line, electrical line). Determine what is behind, within, or on the opposite side of what you are about to drill or cut

Generally speaking when conduit must be cut in place the cut should be performed with a shearing type cutter (bolt cutter, wheel cutter or hand held hacksaw). Powered reciprocating saws, band saws, or rotating saw blades are the exception not the rule.

Whenever a conduit passes through an obstruction such as a wall, floor, ceiling or other physical obstruction the conduit must be cut as close to the obstruction as practical and must be pushed, not pulled through the obstruction.