

Electrical Task Analysis Document

Electrical Demolition



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What is this document for?

This document contains task-specific conditions and recommendations compiled from onsite observations and interviews with electrical workers and industry practitioners. It addresses safety and health hazards as well as production challenges associated with the task. This document can be used for training, hazard analysis, and pre-task planning. This information was gathered from office building retrofit projects.


Task Description:


Electrical demolition is the process of removing existing electrical features and components in order to install new ones. It involves tracing, placing electrical circuits in an electrically safe working condition, and reinstalling circuits prior to other subcontractors performing traditional demolition.

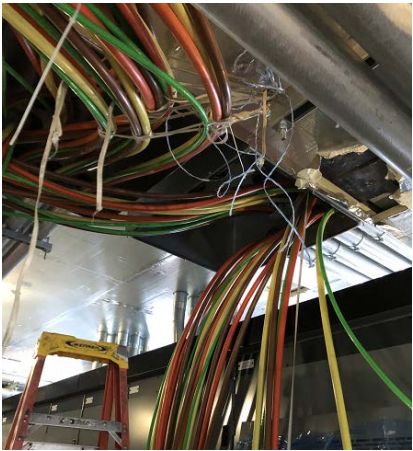

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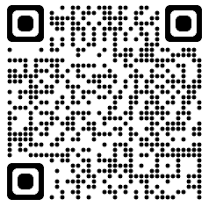
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CONDITIONS	RECOMMENDATIONS
<p>Repetitive climbing and prolonged standing on ladders: Climbing and standing on ladders for extended periods can increase fatigue and raise the risk of falls due to loss of balance.</p>	<ul style="list-style-type: none"> • Adopt a “ladders last” approach: only use ladders when scaffolding, aerial lifts, portable stairs, or pulleys are not available or feasible. • Increase the frequency of breaks • Rotate workers if feasible • Mobile elevating work platforms (MEWP) • Portable lift platforms • Proper ladder selection
<p>Lack of variety in ladder selection: Lack of variety in ladder type and size to accommodate task requirements and worker body size can result in worker discomfort and loss of balance.</p> 	<ul style="list-style-type: none"> • Adopt a “ladders last” approach: only use ladders when scaffolding, aerial lifts, portable stairs, or pulleys are not available or feasible. • Mobile elevating work platforms (MEWP) • Portable lift platforms • Proper ladder selection

CONDITIONS	RECOMMENDATIONS
<p>Tracing mislabeled wires: Crowding and poor labeling of existing wires can make tracing circuits and locating breakers difficult. This can increase the likelihood of errors and may lead to work disruptions and delays.</p> 	<ul style="list-style-type: none"> • Maintain as-builts with highlighted changes • Label wires using color-coded wire markers to indicate the feed source • Use a circuit tracer • Use one-line diagrams • Use nylon wire markers with wrap-around features
<p>Confusion and errors when selecting from numerous components: Working with many types of lighting fixtures can lead to confusion and errors.</p>	<ul style="list-style-type: none"> • Identify and mark all lighting systems to be removed • Label fixtures based on the drawings

CONDITIONS	RECOMMENDATIONS
<p>Distinguishing between commingled wires: Working with commingled wires can increase confusion and the likelihood of mistakes (e.g., low vs. high voltage or old vs. new).</p> 	<ul style="list-style-type: none">• Coordinate with the building engineer to properly identify circuits• Label wires based on the colors in the drawings using a wire marker to indicate the feed source• Use a circuit tracer
<p>Mislabeled junction boxes: Difficulty locating circuits due to mislabeled junction boxes can cause work disruption and delays.</p> 	<ul style="list-style-type: none">• Conduct a field survey of circuits to be demolished to identify secondary power sources• Label or color-code the junction boxes based on the drawings

CONDITIONS	RECOMMENDATIONS
<p>Mishandling small materials: Dropping or losing screws and other small components can cause work disruption.</p>	<ul style="list-style-type: none"> • Pre-sort and track materials • Use magnetic tools
<p>Clashes between electricians and drywall installers: Poor work sequencing can result in clashes between trades. For example, if drywall blocks access to electrical components, work must wait until the drywall crew can remove it.</p>	<ul style="list-style-type: none"> • Coordinate with all trades who might be affected • Building Information Modeling (BIM) • Pre-Task Planning (PTP) Guidelines and Resources for Construction • Last Planner® System; Last Planner® System Workbook
<p>Finding space for junction boxes: Finding a suitable location for a junction box in crowded overhead spaces can be frustrating, time-consuming, and increase the likelihood of errors.</p> 	<ul style="list-style-type: none"> • Building Information Modeling (BIM)



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