

Change Order Guidelines For Electrical and Low Voltage Contractors

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Introduction

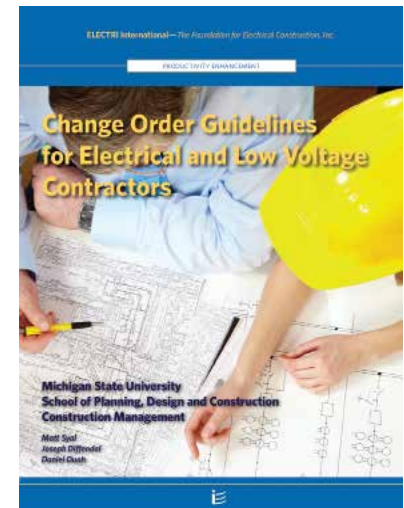
Change orders are an essential part of every construction project. These are issued to accommodate changes to the construction contract. Change orders are generally issued by the owner or designers to the general contractor (GC) or the construction manager (CM) and, in most cases, the GC/CM, in turn, requests the related trades subcontractor to provide a change order proposal. A change order is defined as a written order, agreed upon by the owner, the contractor and the designer, authorizing changes to the scope of the work, the contract sum, and the contract time (AIA-A201-2007, ConsensusDocs 200-2012).

Electrical and low voltage contractors are routinely asked to prepare change order proposals on construction projects. The single most common area of dispute in the change order process is its cost. Among cost-related disputes, items related to recoverable direct cost, overhead-profit %, and impact factors resulting in consequential costs constitute a vast

majority of the disagreements. All types of change orders can have these disagreements but change orders with non-agreed upon price are particularly prone to these. In the case of subcontractors, they face the double task of dealing with GCs/CMs in addition to owners/designers.

Change orders have been a topic of interest among the ELECTRI Council since its beginning. The following studies have been conducted by the ELECTRI Council on change orders and related areas, and this study will complement the efforts of these earlier studies:

- Impact of Overtime on Electrical Labor Prod.: A Measured Mile Approach (Hanna 2011)
- The Impact of Variation on Electrical Contractor Profitability (Daneshgari & Budd 2004)
- Stacking of Trades for Electrical Contractors (Hanna et al. 2002)
- Quantifying the Cumulative Impact of Change



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Orders for Elec. Contractors (Hanna 2001)

- Impact of Change Orders on Labor Efficiency for Elec. Construction (Hanna et al. 1999)
- Change Orders – The Academy of Electrical Contractors (Beck 1996)

The two obvious cost categories of a change order include the direct costs and the overhead-profit costs. The direct costs are easily identifiable and quantifiable whereas the overhead-profit costs are generally quantified as a % of the direct cost or the total change order amount. However, a third category of costs, known as consequential costs due to impact factors, that are difficult to identify and quantify and, therefore, are a source of conflict and controversy when included in a change order.

Electrical and low voltage contractors are, many times, confronted with the situations where they are not allowed to include all their direct cost items and also, appropriate % of overhead-profit in the change orders. Most electrical and low voltage contractors feel that change orders are generally not profitable for them and they end up doing the change order work with smaller markup than the initially bid project. In addition to lack of adequate cost recovery, change orders often have negative impact on the project's overall progress and budget due to their impact on rest of the project.

Low Voltage (LV) Contractors

Low Voltage (LV) contractors have certain unique aspects as compared to medium voltage or high voltage electrical contractors. Many electrical contractors are diversifying their business by adding LV capabilities. If LV contractors are not part of an electrical contractor firm, they generally work as their subcontractors. But, in instances where LV work is part of an overall “controls” contract, electrical contractors may end up working as subcontractors to “controls” contractors. LV contractors are generally the last one out on a project and, this aspect, many times, has impact on their change order pricing.

The overhead and consequential costs have additional significance for the LV contractors because of their unique role on a project. This additional significance may be due to one or more of the following aspects:

- LV contractors' role is mostly towards the end of the project and that leads to more time spent with designers and owners;
- LV contractors are expected to “tie-up” all the loose ends on the project even if many of these

are not in their scope of work or responsibility;

- Owners may have fully or partially occupied the building causing disruption to LV contractor's work due to crowding, need to work around owner's operations, demand for quiet work areas, need to deal with facility security, etc.;
- LV contractors may have higher pricing for certain cost items (e.g., high-end electronic gear and visual equipment) in a change order due to the specialized nature of their work, material cost escalation, skilled worker training, etc.;
- Because of a lack of full understanding of LV contractors' work scope by owners and GC/CM's, their part in a change order may not be identified in a timely fashion; and
- As a result of the above-noted aspects, owners may develop a misleading perception of holding LV contractors disproportionately responsible for delays in the project completion

Scope and Methodology

The main purpose of this project is to develop change order guidelines for electrical and low voltage contractors that will provide a systematic and fair process for the pricing of change orders. It identifies various costs categories and items, investigates overhead-profit practices, and identifies various impact factors and methods used to calculate associated consequential costs. Although the main focus of this effort is on electrical contractors, interactions with and/or input from many related industry groups, outlined below, are also taken into consideration.

The methodology used for this research involved academic and industry literature review, comparison of standard contract documents, industry surveys, analysis of court cases and case studies, and interactions with other subcontractors' and owners' groups:

1. Literature Review
2. Standard Contract Documents
3. Industry Surveys
4. Court Cases
5. Case Studies
6. Interactions / Inputs from Other Subcontractors' Groups
7. Interactions / Inputs from Owners' Groups