



# HAMPTON TEDDER SERVICES

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Why do you need a Short Circuit and Coordination Study performed on an electrical distribution system??

*Can't say why??*

>>>To avoid this!!! >>>



A Short Circuit and Coordination Study (SC&C) is one of the most important steps you may ever take to protect either yours or your client's personnel and electrical distribution system. *When an electrical fault exceeds a protective device interrupting rating, consequences can be devastating including injury, damaged electrical equipment, and costly downtime.*

In a Short Circuit Study, faults are assumed at different points on the line side of various devices that will be interrupting the power system. This determines if a device can interrupt current available at the time of a fault. Many times the source side of the interrupting device is an electrical bus in a piece of switchgear & current flows through bus bars create forces between different phases of the bus. So, during a fault, current magnitude is radically greater than normal current flow, and this force between bus bars is increased by the square of current increase or 16x if the fault current is 4x normal. Short Circuit Studies yield information necessary to determine if breakers & fuses are capable of interrupting faults and determining whether or not switchgear bus sections are adequately supported to withstand forces generated by fault currents.

A Coordination Study looks at protective devices from a slightly different angle to determine how to set protective devices in order to minimize the outage area. Selectivity is determined so a fault is interrupted only within its affected circuit, thereby, minimizing power disruption.

Every power system adds & removes loads & transformers; utilities add/change generation & transmission facilities. These alter an electrical system's overall impedance & protection requirements. Thus, adequacy or inadequacy and proper device settings can only be determined through either an SC&C Study or when a device doesn't interrupt a fault and often explodes, sometimes catastrophically.

We also recommend both a Load Study (system adequacy & proper protective device sizing/setting) and an Arc-Flash Hazard Study (analyzes arc-flash hazards to establish safe distances around electrical equipment and appropriate Personal Protection Equipment). Arc-flash data labels are attached to equipment enabling a facility manager to comply with NFPA/IEEE guidelines enforced by OSHA inspectors.

***Our Professional Engineers can help with the above Engineering Studies and other Engineering Services!!***

***Call one of our offices today for discussions and details.***

**[www.hamptontedder.com](http://www.hamptontedder.com)**