



## Worker Injured by Accidental Contact with 400 Amp Electrical Service

**WHAT HAPPENED:** An electrician was in the process of pulling wire branch circuits through a new conduit to an existing 400 AMP 3 phase panel board with a metal fish tape. The front of the panel board was removed exposing the live terminal connections. He had two co-workers with him. One was feeding the branch circuit conductors through the conduit and the other was behind him rolling up the fish tape as it was pulled it out of the conduit. The tape drooped and came in contact with the “B” phase lug of the panel board feeder. The metal tape instantly became red hot similar to an oven element. The electrician received burns to his palms and fingers. He was rushed to the infirmary for treatment. The tape melted the insulation of three other live conductors within the box. Had the electrician been touching a path to ground a fatal shock may have occurred.

**WHAT CAUSED IT:** The metal fish tape served as a conductor and became energized when the metal raceway and exposed live parts were simultaneously contacted. Protective measures (such as insulating blankets or rated gloves) were not taken to ensure that live parts were adequately protected from accidental contact during this operation.



**CORRECTIVE ACTIONS:** OSHA states, "... must not permit an employee to work near any part of an electric power circuit that the employee could contact..., unless the employee is protected against shock by de-energizing the circuit and grounding it or by guarding it effectively by insulation or other means". One of the approaches, de-energizing (preferred) or guarding will be used on all future projects.

Non-metal fish tape will always be used when working in conduit or boxes with live power.

When live parts are exposed for maintenance or repair, they will be guarded to protect from accidental contact using a rated insulating blanket or rated electrical gloves will be worn by the electrician.

Although not contributing to the accident, no hand tools rated for electrical work were available. When working where tools may contact exposed energized conductors, electrically insulated tools, specifically manufactured and labeled to meet ASTM F 1505-94, will be used. Simple plastic-dipped handles carry no electrical safety rating and are not for use on live equipment.

The division conducted a counseling session with the personnel manager, safety committee chair, direct supervisor and employee to discuss the accident, causes, and actions that both worker and management will take to prevent recurrence of similar accidents.

Please Note: All electrical work (e.g. adding a circuit), other than replacing in kind, requires a building permit before work is started.