C17 Downed Power Line Electrocution Case: Legal and Engineering Issues

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After attending this presentation, attendees will understand the importance for lawyers, judges, and engineers to recognize how the use of the forensic sciences affects the behavioral, legal and causal issues of a litigated case. This stresses the importance that admissible evidence, codes and standards, operating procedures, videos, photos, eyewitness accounts, and autopsy reports all fit the puzzle pertaining to downed power line electrocution matters.

This presentation will impact the forensic science community by expanding the knowledge of factors affecting downed power line electrocution litigation so the competence and performance of lawyers and engineers, vis-a-vis the court, will be enhanced.

Legal Summary & Description: Timothy Cutler was 32 and resided in California. He was an interesting and exciting young man who was looking forward to his wedding on January 24, 2004. Early in the morning of January 23, 2004, a 7,200 volt power line, owned and maintained by the local utility, fell. The power line caused a fire in the front yard of Cutler's house.

No one saw what happened to Tim Cutler, but he was severely burned by the electricity, arcing, and fire, and three days later, succumbed to those injuries.

The utility managed the news story by showing a picture of a dead pigeon in Cutler's driveway and suggesting Tim had picked up the live conductor, thereby causing his own fatal injuries. Being a single man, his parents were his only heirs, and hired the a law firm to investigate the circumstances of their son's death.

Forensic experts were retained to examine the scene, evaluate the damaged conductor, inspect the infrastructure and substation, and analyze the injury to Cutler's hands and face.

The biomechanical expert concluded Cutler didn't grasp the conductor, but rather used his hand to deflect it when it whipped off the ground.

The forensic electrical engineering experts concluded the splice, not the pigeon, was to blame for the line separating and that the utility violated numerous standards and operating procedures.

Forensic electrical engineers were enlisted to tie all the other forensic facts together to hypothesize how Tim Cutler got out of his house after the power went out and the fire started in his front yard, where he innocently encountered the live conductor.

The forensic work and conclusions caused the utility to settle this case before a lawsuit was filed for $1.5 million.

Chronology: An automatic splice on a #6 solid copper wire let go on a 200 foot span between poles – Energized wire (at 7200 volts) fell on sidewalk and grass boulevard – Arcing to ground ensued – 100 amp fuse protecting the #6 copper wire lateral does not open - Substation recloser set at 149 amp ground fault pick up trips and recloses - Arcing stops and resumes – Recloser trips a second time and locks out - Victim approaches downed wire in driveway – Utility log shows 3389 customers out of power – Utility operator closes recloser switch via remote control – Re- energized wire bounces up and contacts victims hand, finger burnt off - Victim is electrocuted and engulfed in flame

Violations/Errors/Issues: Manufacturing and installation errors - Lateral fuse size protecting line too large - Utility operator violated utility written operating instruction. - "…if the location of the trouble (fault) is not known, sectionalizing and testing should begin immediately."

Pathology Facts: consisted of various injuries and burns

References:

Institute of Forensic Electro-Pathology Database - California General Order 95 - Transmission & Distribution handbook -

Distribution construction reference manuals (various utilities) – National Electrical Safety Code – Overhead distribution standards

– REA – Sectionalizing guide

Electrocution, Downed Power Line, Splice

 ** Presenting Author*