High voltage, high stakes, Part II Shop around for evidence, experts in electrical injury cases

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In the first installment of this series, we explored code provisions, case law, standards and other substantive legal principles that come into play in electrical injury cases. In Part 2, we will examine aspects of discovery, expert witness selection and damages that are characteristic of the catastrophic electrical injury case.

Discovery in the electrical injury case

While not necessarily unique, discovery in electrical injury cases does present a number of challenges to lawyers who have not previously handled such cases. As with any claim, discovery strategy will turn upon the type of incident at issue in the case. For example, if the case involves contact with an overhead power line or a substation accident, the list of documents to be obtained would include joint use agreements, documents memorializing clearance measurements, blueprints, schematics, drawings, photographs, one-line drawings, CAD/CAM documents, renditions, as-built drawings or other documents depicting the design, appearance, construction or layout of the equipment or installation at issue, coordination and sectionalizing studies, testing data, time current characteristic curves for reclosers, ME controller settings, and documents containing relevant SCADA data.

For cases involving electrical equipment (such as a transformer, breaker or switchgear), documents to be obtained from the defendant would include all documents depicting the circuit of which the equipment was a part, documents reflecting repair or maintenance activities, operator manuals, reports documenting equipment testing (such as infrared/thermal testing imaging and studies), policies and procedure for use and maintenance of the equipment, and documents memorializing activities to assess or mitigate arc flash hazards, documents relating to the creation of arc flash protection boundaries and the performance of flash hazard analyses, and documents relating to the use of personal protective equipment when working on or operating the equipment.

In all electrical cases, request copies of all policy and procedure manuals, especially those relating to electrical safety issues. Your shopping list should also include all bulletins, memoranda, flyers and communications from the defendant's safety department. Also request copies of all training materials that address the activity at issue in your cases (e.g., performing routine maintenance of circuit breakers), as well as those addressing general electrical safety matters (e.g., proper grounding methods).

Discovery from third-party sources will play a critical role in many electrical injury cases. For example, public utilities, electrical cooperatives and municipal electric departments routinely employ the services of outside consultants to evaluate, test, assess and plan their electrical distribution systems. Issuing a well-tailored subpoena to these consultants can yield a bounty of relevant documents, including reports, safety audits, NESC compliance audits, surveys and system planning documents. If your case involves a substation accident or other large installation, be sure to request all drawings, plans, blueprints, correspondence, logs, journals and other construction-related materials from the contractors and engineers who were involved with the design and construction of the facility.

Public utilities, cooperatives and municipal electrical departments routinely employ the services of independent contractors (such as Pike Electric Corp.) to construct facilities and installations, work on overhead distribution lines, assist with storm clean-up and perform repairs and routine maintenance.

Requesting documents and deposing key personnel from these contractors is an important piece of the discovery puzzle.

In cases involving specific pieces of equipment (e.g., transformers, switchgear panels, circuit breakers and re-closers), be sure to subpoena the warranty, repair and maintenance records from the equipment manufacturer. Among other things, these records will also typically memorialize calls for assistance from the equipment owner that will reflect problems experienced with the use and operation of the equipment.

Because so many electrical injury cases arise from workplace incidents, it is also important to obtain investigative materials from the North Carolina Department of Labor. These would include OSHA citations and reports for the incident at issue in your particular case, as well as prior citations and reports involving your defendant. A list of citations and general OSHA activities can be obtained at the Internet site for the U.S. Occupational Safety and Health Administration at www.osha.gov.

Damages in electrical injury cases

Electrical energy inflicts devastating injuries. When electrons flow through the body of a person, they produce injury or death by depolarizing muscles and nerves, initiating abnormal electrical rhythms in the heart and brain, and producing catastrophic electrical burns. These burns include flash burns, arc burns and direct contact burns. The passage of high voltage electricity through the human body can cause massive tissue damage, resulting in necrosis. In many cases of high voltage electrical injury, skin, limbs, muscle, bone and even organ tissue will need to be surgically removed in the weeks and months following the injury. Hospitalizations of up to a year are not uncommon.

Given the devastation that can be inflicted by high voltage electricity, electrical injuries will frequently impact a survivor for the remainder of his or her life. As a consequence, enlisting the services of a well-qualified life-care planner is of utmost importance. In addition, because many survivors will not be able to return to their former line of work, a vocational rehabilitation expert will play a major role in establishing damages in many electrical injury cases.

Often overlooked are the neurological and psychological aspects of electrical injury, which may go unaddressed at a burn or trauma center. The cognitive, behavioral and emotional aspects of an electrical injury can be every bit as devastating as its physical component. Given the dramatic nature of most electrical injury incidents, many survivors will experience symptoms of post-traumatic stress disorder. The literature identifies other broad-ranging psychological sequelae, including memory deficits, and problems with language, new learning, attention and concentration. Accordingly, many electrical injury cases will require the use of a neurologist, neuropsychologist or other qualified expert who has experience treating electrical injury patients.

Building your team of experts

The type of non-medical experts required in an electrical injury case will turn upon the facts of your case. If the incident involves overhead power lines, a substation or other high-voltage transmission and distribution equipment, you will need a qualified National Electrical Safety Code expert. An NESC expert will be able to assess the facts of the case and determine whether the defendant was in compliance with the NESC, and whether a violation of an NESC provision caused or contributed to your client's injuries. These experts will typically be electrical engineers and will have past experience working with public

utilities and other entities involved with the generation, transmission and distribution of electricity. Because many of these experts depend upon the patronage of public utilities and other potentially responsible parties for the bulk of their business, finding an expert who is willing to testify on behalf of a plaintiff can be challenging.

In cases involving a particular piece of equipment, faulty wiring or negligent installation, a National Electrical Code expert will be a key player. The NEC expert can review the methods of installation or construction and determine whether these activities were conducted in compliance with the NEC.

Cases involving negligent maintenance of high voltage equipment will likely require an expert who is familiar with the standards established by the National Fire Protection Association. For example, in cases involving dust explosions, experts in the interpretation of NFPA 484 (standard for combustible metals, metal powders and metal dusts) and NFPA 499 (classifications of combustible dusts and hazardous locations) will be in order. If your case involves a sloppy electrical safety program, an expert in the application of NFPA 70E, which establishes a broad, multi-faceted standard for the establishment of electrical safety programs, will be necessary. If your case arises from failure to properly maintain high voltage equipment in good working order, an NFPA 70B expert will be necessary.

Other cases may require the involvement of OSHA safety experts (for lockout/tagout and other general safety issues), human factors experts, materials science experts and admiralty experts.

Third-party tort claims

Workers compensation attorneys should be vigilant about exploring possible third-party tort claims. Given the steep threshold in Woodson and Pleasant claims, pursuing a third-party claim offers workers their best opportunity to obtain full compensation for their electrical injuries.

In electrical injury cases, third-party claims arise in a variety of scenarios. For example, a cable television worker who is electrocuted while working on aerial CATV lines may have a cause of action against a public utility for failure to maintain proper clearances or for failure to conduct appropriate tree-trimming activities. Similarly, an independent contractor who is injured by an exploding switchgear may have a claim against the owner of the equipment for failure to properly clean and maintain the switchgear. Injured workers might also have recourse against manufacturers when a defective product causes a severe electrical injury. In other cases, the worker may have a cause of action against general contractors, lessors and lessees of property, property owners and business operators. The possibilities are virtually limitless.

Conclusion

Electrical injury cases offer the potential of great rewards but confront practitioners with unique challenges. A healthy dose of intellectual curiosity, an eye for sleuthing and a flair for finding good experts are critical to success in pursuing electrical injury cases.