

# Legal Liability for Electricity in the USA: Products Liability

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## Keywords

electric, electrical, electricity, law, legal, liability, negligence, negligent, outage, overvoltage, overvoltages, power quality, product, products liability, Ransome, service, stray voltage, surge, surges, temporary overvoltages, utility, utilities

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## Introduction

This essay explores the topic of legal liability of electric utilities in the USA for interruptions in electric power (i.e., outages), surges (i.e., transient overvoltages from lightning or switching reactive loads), and temporary overvoltages.<sup>1</sup> A particular goal of this essay is to inform in-house counsels for corporations and insurance companies, as well as attorneys representing individual user(s), with claims for damages by electric utilities.

As the title of this essay indicates, this essay only discusses engineering practice and the law in the USA. The major feature of this essay, at pages 11-19 below, is an annotated list of cases that permit an electric utility to be sued under products liability theory for providing defective low-voltage electricity. Other sections of this essay, at pages 24-31 below, contains annotated lists of cases that consider whether electricity is a service or product, but either do not clearly decide the issue, only consider high-voltage electricity, or continue the old rule that electricity is always a service. The remainder of this essay critically examines some of the reasoning in these cases.

During 1977-95, I worked as an electrical engineer, including ten years as a professor of electrical engineering. During 1983-93, I did engineering research in protection of electronic circuits and systems from surges, with some research in other kinds of disturbances on ac power lines. When I changed careers from engineering to law in the mid-1990s, I continued to be interested in disturbances on electric power system. I did my first search of cases in the Westlaw database on this topic in August 1996. In preparing this essay, I did additional searches on Westlaw in December 2005 and April 2011.

### disclaimer

This essay is intended only to present general information about an interesting topic in law and is *not* legal advice for your specific problem. See my disclaimer at <http://www.rbs2.com/disclaim.htm> .

I emphasize that the list of citations in this essay is *not* a complete list of all cases in the USA, but covers most of the cases with an extensive discussion of the service/product distinction for low-voltage electricity.

I list the cases in chronological order in this essay, so the reader can easily follow the historical development of a national phenomenon. If I were writing a legal brief, then I would use the conventional citation order given in the *Bluebook*.

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<sup>1</sup> These terms are defined below, beginning at page 4.

## Overview of Issues

Before approximately 1980, electric power was mostly used for lighting, heating, and rotating motors. Such uses can tolerate brief interruptions (e.g., causing the lights to flicker for a fraction of a second to a few seconds) and can also tolerate most surges (e.g., transient overvoltages) with few problems. Since 1980, the widespread use of electronic circuits, not only in computers, but also in so-called “smart appliances” and industrial controls, made users more susceptible or more vulnerable to what had previously been minor problems in electric power.

Because the local electric utility is a monopoly, electric service is highly regulated by state public utility commissions and, more recently, by the federal government. Such regulation can make it difficult for electric utilities to offer new services, such as selling surge-protective devices, uninterruptible power supplies, and other power conditioning equipment to users. Such regulation can also make it difficult for electric utilities to upgrade their equipment to provide higher-reliability service, because of maximum limits on the rates that utilities can charge for electric energy. And, finally, such regulation can sometimes affect users who want to sue an electric utility, by including limitations of liability in tariffs.

### definitions

Electrical engineers who work with electric power distribution systems divide systems into *low-voltage* (i.e., less than 1 kV) systems and *high-voltage* (more than 1 kV) systems. The transmission of electric power from generators to substations is always done at high voltage, so that large quantities of power can be transmitted with relatively small currents, thereby avoiding the need for large diameter wire, which is expensive, and also reducing the waste of electric power in the resistance of the wire. Electricity leaves a substation in the utility’s distribution system, which is typically operated at between 7 and 12 kV, higher voltage being the modern choice. Near the utility customer is a final *distribution transformer* that converts the distribution voltage (e.g., 12 kV) to low voltage (typically 120/240 V) used by the customer. Lawyers should take note that the transmission and distribution systems contains high-voltage electricity, while the user is supposed to receive low-voltage electricity.

The voltage waveform supplied by the electric utility to residential customers is normally a sinusoidal function of time. Because the value of voltage is continuously changing, electrical engineers characterize the amplitude of a sinusoidal voltage by using its root-mean-square (rms) value. The common 120 V electricity has a nominal rms value of 120 V, but its actual value can be between 110 and 126 V rms, and still be acceptable. ANSI C84.1-1982.

There are a variety of *disturbances* of the voltage waveform that can cause problems for users of electricity. A disturbance is any nonideal condition that causes loss or inconvenience to a user.

1. interruptions in electric service (e.g., *outages*, *blackouts*), characterized as zero volts for seconds to tens of hours.
2. *surges* (i.e., transient overvoltages, typically with durations of less than a few milliseconds, caused by lightning or switching reactive loads). In the absence of surge-protective devices, the peak voltage of a surge on low-voltage circuits can be as high as 6000 V. Surges with peak voltages larger than approximately 6000 V cause a spark in air between adjacent conductors, and the subsequent arc will limit the voltage.
3. *temporary overvoltages* (i.e., sustained overvoltages that destroy both equipment and surge-protective devices), characterized as higher than normal rms voltages (e.g., more than 130 V rms on a nominal 120 V rms supply).
4. reductions in rms voltage (commonly called *brownouts*), characterized as lower than normal rms voltages (e.g., less than 110 V rms on a nominal 120 V rms supply).

The amplitude of all of these disturbances, except surges, is measured in rms volts.

*Stray voltage* is electrical jargon for phenomena that causes objects in a dairy or ranch environment to be *unexpectedly* electrified. Mild electrical shocks to the animals when drinking (e.g., when their mouth or tongue touches an electrified source of water) can teach the animals to avoid water, leading to dehydrated animals, and decreased milk production in a dairy. Because stray voltage cases raise the same issue of whether electricity is a service or product, I have searched Westlaw for, and cited, reported stray voltage cases in this essay. However, this essay is *not* about stray voltage.

In this essay, *modern* refers to after February 1979, when the landmark case of *Ransome v. Wisconsin Elec. Power Co.*, 275 N.W.2d 641 (Wis. 1979) was decided. *Ransome* began the modern trend for courts in the USA to consider low-voltage electricity under products liability, instead of the old view that electricity was always a service.

#### examples of harm by disturbances from electric utilities

As mentioned above, there are several different types of disturbances of the voltage waveform that can cause problems at the user's premises.

1. interruptions in electric service (see my essay at <http://www.rbs2.com/outage.pdf> )
2. surges
3. temporary overvoltages
4. reductions in rms voltage

When there is an interruption of electric power for less than one minute, damages and economic losses to *most* utility customers are minimal. Computers can continue to operate through such brief interruptions by using power from batteries in an uninterruptible power supply.

However, for interruptions of electric power for more than a few minutes, it is prudent to shut down computers and uninterruptible power supplies, which shutdown idles their users and wastes salaries/wages. Interruptions of electric power for more than an hour can destroy perishable items in refrigerators and freezers. There is also cost of re-doing work that was ruined at the moment the outage began, payment of overtime after power is restored, etc. Considering that interruptions of electric power rarely cause damage to equipment, a user's loss during an outage can be surprisingly large. Litigation over outages is difficult. The court may reject products liability, because the judge believes no product was delivered during the outage (i.e., an outage consists of zero volts, zero amperes, and zero kilowatt-hours — an outage is *nothing*). No reasonable electric utility would give a warranty of continuous service, thus frustrating a plaintiff who contemplates suing for breach of contract. Even if the utility was negligent, the economic loss rule may prevent the plaintiff from recovering.

Surges can permanently damage electronic equipment, such as computers and television receivers. Severe surges can damage electric motors. While prudent users have their most valuable equipment connected to a surge suppressor, such surge suppressors are not intended to divert or block severe surges.

Causes of temporary overvoltages (TOV) include (1) disconnection of the neutral wire between the utility's distribution transformer and the user's premises, (2) failure of insulation at the utility's distribution transformer, or (3) a higher-voltage distribution line making accidental contact with a lower-voltage distribution line. As an example of the third kind of cause of TOV, a hypothetical utility pole might have 30 kV distribution wires at the top, 12 kV distribution wires slightly below, and then telephone and cable television wires lower down the pole. When a drunk driver hits the pole, the 30 kV distribution wires at the top may break and fall onto the 12 kV distribution wires, thereby increasing the voltage to 250% of nominal ( $30\text{ kV}/12\text{ kV} = 2.5$ ), which means that a user's nominal 120 V wall outlet will provide 300 V. This abnormally large voltage can persist for seconds to minutes, depending on protective devices in the utility's distribution system (e.g., reclosures, fuses) and the utility's load at the time of the temporary overvoltage. During this kind of temporary overvoltage, tungsten-filament light bulbs will quickly burn out and varistors in surge-protective devices will fail as a near short circuit. A temporary overvoltage can cause varistors in surge suppressors to be a fire hazard.<sup>2</sup> Users may win litigation against a utility for temporary overvoltage on theories of either defective products or negligence.

Reductions in rms voltage can cause overheating of motors and consequent failure of the motor. Brownouts commonly occur when demand for electricity exceeds supply (e.g., on a hot summer day when residents are both operating air conditioners and cooking in their electric ovens).

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<sup>2</sup> See, e.g., Ronald B. Standler, *Fire Hazards of Surge Suppressors*, <http://www.rbs2.com/fire.htm> (Sep 2001).

In doing searches of the Westlaw database for liability cases involving defective electricity furnished by utilities, I have found remarkably few appellate cases. Most of the reported cases involve either (1) personal injury/death from touching an energized conductor, (2) losses from one of the large-scale blackouts in the northeastern USA, or (3) stray voltage cases. Litigation concerning damages from surges, temporary overvoltages, or brownouts seems to be uncommon. It may be that the value of damages from typical power disturbances are too small to justify litigation.

#### mitigation of damages

There are various devices<sup>3</sup> that users can connect inside their premises to avoid — or to mitigate — damages from disturbances on electricity provided by a utility:

1. *Surge-protective devices* include surge *arresters*, which are connected to the low-voltage supply at the watt-hour meter or circuit breaker panel, and surge *suppressors*, which are connected at the wall socket or inside vulnerable electronic equipment. Surge-protective devices divert surge current from vulnerable equipment and limit surge voltages. A surge arrester is typically designed to divert larger surge currents than a surge suppressor.
2. An *uninterruptible power supply* (UPS) allows small loads (e.g., a personal computer or other critical item) to be operated continuously from batteries during interruptions in electric utility power that last less than a few minutes.
3. A *line conditioner* regulates the rms voltage to a sensitive load. One common technology uses a *ferroresonant transformer* to provide a nearly constant rms voltage over a wide range of utility voltages, while another common technology uses a *tap-switching transformer*.

In contrast to these common engineering solutions to surges, brief outages, and small fluctuations in rms voltage, there is nothing that a user can do to prevent damage when a utility delivers a severe temporary overvoltage (e.g., high-voltage on wires that should have low-voltage).

It is sometimes said that a user has a duty to mitigate damages. This is technically wrong, because there is no legal duty. Instead, a user can not be reimbursed for damages that the user could have avoided, by doing what a reasonable person would have done.<sup>4</sup> This rule of law is formally known as the doctrine of avoidable consequences.

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<sup>3</sup> See, e.g., Standler, PROTECTION OF ELECTRONIC CIRCUITS FROM OVERVOLTAGES, New York: Wiley-Interscience, 434 pp., May 1989. Republished by Dover Publications, December 2002.

<sup>4</sup> *In re Hannaford Bros. Co. Customer Data Security Breach*, 4 A.3d 492, 496-497 (Me. 2010); RESTATEMENT (SECOND) OF TORTS § 918 (1979); W. Keeton, D. Dobbs, R. Keeton, D. Owen, PROSSER AND KEETON ON THE LAW OF TORTS, § 65 at pp. 458-59 (5thEd. 1984).

Note that the doctrine of avoidable consequences “normally<sup>5</sup> comes into action when the injured party’s carelessness occurs *after* the defendant’s legal wrong has been committed. Contributory negligence, however, comes into action when the injured party’s carelessness occurs *before* defendant’s wrong has been committed or concurrently with it.” *Ostrowski v. Azzara*, 545 A.2d 148, 152 (N.J. 1988). The use of surge-protective devices and uninterruptible power supplies is good engineering practice, because it significantly increases the reliability of the user’s electronic equipment for a small cost to the user. Furthermore, small surges and interruptions of electric power for less than a few seconds are both common and foreseeable. So, regardless of whether a judge says “avoidable consequences” or “contributory negligence”, a plaintiff can not recover for damages that the plaintiff could have avoided by good engineering practice by the plaintiff. Put another way, a user who chooses to operate a computer without a surge suppressor has assumed the risk that a surge may damage the computer.

#### electrocution

Alleging products liability will rarely be appropriate in a case involving personal injury (including electrocution) from contact with electrical conductors.

In cases involving low-voltage electricity, the injury from human contact with electricity is usually<sup>6</sup> *not* the result of a defect in the electricity, indeed the electricity does exactly what one would expect it to do in such cases: fry the victim. Moreover, the electric utility is usually not responsible for wiring and appliances downstream from the watt-hour meter.

In cases involving contact with a high-voltage distribution line, products liability does not apply, because there is no defect in the electricity. However, there may be negligence issues about the utility using *uninsulated wires*<sup>7</sup>, putting the wires too near the ground, etc.

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<sup>5</sup> Standler’s comment: As an example of not normal, see *Waterson v. General Motors Corp.*, 544 A.2d 357, 372-373 (N.J. 1988) (failure to wear seat belt before automobile accident was not contributory negligence, but would reduce plaintiff’s damages under doctrine of avoidable consequences); *Spier v. Barker*, 323 N.E.2d 164, 167 (N.Y. 1974) (same).

<sup>6</sup> One exception is when the utility delivered a voltage much higher than the expected nominal voltage (e.g., utility supplies more than 1000 V on nominal 120 V conductors), so that the victim’s insulation was adequate for the expected voltage but *insufficient* for the actual, abnormal voltage.

<sup>7</sup> Or wires with insulation to reduce arc current during contact with tree branches, but *not* enough insulation to protect humans from shock.



Many courts have noted that the high-voltage electricity has not yet been put in a form for delivery to a customer, therefore products liability can not apply to high-voltage electricity.<sup>8</sup> This reason *assumes* that the only customer is the end user of the electricity. In fact, many utilities buy and sell high-voltage electricity amongst themselves, so a utility can be a customer for high-voltage electricity, making high-voltage electricity in the stream of commerce. Furthermore, tort law does *not* require that the victim be a purchaser of the product, it is adequate if the victim is a bystander.<sup>9</sup> It seems to me that courts are wrong to reject products liability for high-voltage electricity because it allegedly is not in the stream of commerce or not yet delivered to a customer.

#### quick comment on stray voltage

In stray voltage cases, plaintiff's electrical engineering experts might measure the stray voltage while the low-voltage service is switched on and off at the main service disconnect (e.g., the large circuit breaker at the top of the panel, or a disconnect switch between the meter and circuit breakers), to attempt to prove that the stray voltage comes from the low-voltage electricity that passed through the meter. In addition to products liability theories, a plaintiff may be able to prove negligence or nuisance theories.<sup>10</sup>

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<sup>8</sup> See, e.g., *Pierce* and subsequent cases in California, *Schriner*, 501 A.2d at 1133-34 (Penn.Super. 1985), *Smith*, 734 P.2d at 1054-57 (Colo. 1987), each holding that high-voltage electricity in the distribution system has *not* been put in the stream of commerce.

<sup>9</sup> *Elmore v. American Motors Corp.*, 451 P.2d 84, 88-89 (Cal. 1969) (A manufacturer or seller is strictly liable in tort, and some states extended this rule to protect innocent bystanders. At 89: "In short, the bystander is in greater need of protection from defective products which are dangerous, and if any distinction should be made between bystanders and users, it should be made, contrary to the position of defendants, to extend greater liability in favor of the bystanders."); *Salvador v. Atlantic Steel Boiler Co.*, 319 A.2d 903, 904 (Pa. 1974) (Extending warranties to bystanders. "... we hold that lack of horizontal privity itself may no longer bar an injured party's suit for breach of warranty."); *Garcia v. Texas Instruments, Inc.*, 610 S.W.2d 456, 463-464 (Tex. 1980) (same). W. Page Keeton, editor, PROSSER AND KEETON ON THE LAW OF TORTS, West Publishing, Fifth Edition (1984), § 100.

<sup>10</sup> *ZumBerge v. Northern States Power Co.*, 481 N.W.2d 103 (Minn.App. 1992), *review denied* (Minn. 1992) (million-dollar verdict for plaintiff); *Allen v. Wisconsin Public Service Corp.*, 694 N.W.2d 420, 2005 WI App 40 (Wis.App. Feb 15, 2005), *appeal denied*, 703 N.W.2d 376, 2005 WI 136 (Wis. Jul 28, 2005) (Upholding award of \$ 750,000 in economic damages for stray voltages on a dairy farm plus an award of \$1,000,000 for annoyance, inconvenience, and loss of use and enjoyment of his property.).

## overview of service/product distinction

This service/product legal distinction is important to users, because it more difficult for a user to recover in tort for a negligent service, than for a defective product. In a negligence case, the plaintiff must prove that the utility violated some specified duty of care (e.g., violated the requirements of good engineering practice specified in some engineering standard) and that defendant's breach of this duty caused the injury to plaintiff. But in a products liability case,<sup>11</sup> the plaintiff must prove that the electricity was in a defective condition and the defective electricity caused the injury, so-called "strict liability" because there is no need to prove either negligence or fault by the electric utility. As any attorney knowledgeable about torts knows, the issues are more complicated than sketched here, and that preparing for trial is hard work. Nonetheless, products liability cases are easier to present than negligence cases, when the alleged negligence involves engineering practices that are *unfamiliar* to the judge and jury.

Some of the confusion in American law may be due to the conventional use of the American English phrase "electric service" to mean electricity supplied by a utility to a user. Some American electric utilities have named themselves "Public Service Co." Perhaps a more accurate phrase would be to use the British English phrase "electricity supply", which does not bias the reader about whether electricity is a product or a service.

Prior to the year 1979, electric power in the USA was nearly always considered by courts as a service, *not* a product. However, in the landmark case of *Ransome v. Wisconsin Elec. Power Co.*, the Wisconsin Supreme Court declared in 1979 that low-voltage electricity was a product after the electricity passed through the watt-hour meter that demarcated the utility electrical system from the user's electrical system (i.e., user's premises wiring and loads). My research has found cases with similar holdings earlier than *Ransome* in California and Indiana, but these earlier cases received little attention by courts in other states. In 1997, eighteen years after *Ransome*, the Restatement of Torts adopted the rule in *Ransome* as the law in the majority of the USA:

The second major category of intangible, harm-causing products involves the transmission of intangible forces such as electricity .... With respect to transmission of electricity, a majority of courts have held that electricity becomes a product only when it passes through the customer's meter and enters the customer's premises. Until then, the system of high voltage transmission provides, not a product, but a service; before passing the meter and entering the plaintiff's premises, so it is said, the electricity has not entered in the stream of commerce.

RESTATEMENT THIRD OF TORTS: PRODUCTS LIABILITY, § 19, comment *d* (1997).

Quoted in *Travelers Indemnity Co. of America v. Connecticut Light and Power Co.*, 2008 WL 2447351 at n.2 (Conn.Super. 2008).

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<sup>11</sup> Restatement Second of Torts, § 402A (1965).

Electric utilities hate this new rule of law that makes low-voltage electricity a product, because it may greatly increase the utilities' legal liability to users. The following section of this essay contains an annotated list of cases in the USA where courts have held that low-voltage electricity is a product.

### **In Some States: Low-Voltage Electricity Is a Product**

This section lists cases, alphabetically by states, that hold that electricity is a product after it passes through the watt-hour meter that separates the utility system from the user's system. I have only searched Westlaw databases for state and federal cases since 1 Jan 1979 (i.e., about two months before *Ransome*), although I cite below a few earlier cases that were mentioned in the text of cases that I found in my search.

In some of the following cases that hold that low-voltage electricity is a product, the plaintiff lost because the electricity that caused his/her damages was from a high-voltage distribution line, for which courts commonly hold products liability does *not* apply, because the high-voltage electricity has not been reduced to a low-voltage for consumption by an end user.

#### **California**

- *Baldwin-Lima-Hamilton Corp. v. Superior Court In and For City and County of San Francisco*, 25 Cal.Rptr. 798 (Cal.App. 1 Dist. Oct 24, 1962) (Case involves bidder on contract to supply equipment for generation of electricity. At 809: "Electricity is a commodity which, like other goods, can be manufactured, transported and sold." Quoted in *Pierce*, 212 Cal.Rptr. at 290.);
- *United Pacific Co. v. Southern Cal. Edison Co.*, 209 Cal.Rptr. 819 (Cal.App. 2 Dist. Jan 15, 1985) (Kite hit three-phase 16 kV distribution line, causing conductors to arc, molten aluminum from wire started brush fire under distribution line, fire damaged approximately 200 homes. The trial court dismissed a strict liability count and the appellate court affirmed.);
- *Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283 (Cal.App. 3 Dist. Mar 26, 1985) (Utility installed used, but *untested* distribution transformer. Transformer failed during installation and sent approximately 7 kV into plaintiff's home, instead of nominal 120/240 V. California appellate court adopted the reasoning of *Ransome*.);
- *Thibos v. Pacific Gas & Electric Co.*, 232 Cal.Rptr. 11, 13 (Cal.App. 1 Dist. 10 Nov 1986) (Pedestrian struck by automobile on dark night sued electric utility because a streetlight had failed when he stepped off the curb to cross the street. Judgment for utility: "In fact, [plaintiff's] claim of negligence was based on PG & E's failure to take action once it discovered that *high-pressured sodium bulbs* it was installing in its fixtures were burning out

prematurely; there was no claim that the *electricity* powering the lights was irregular.”), *review denied* (Cal. 1987);

- *Fong v. Pacific Gas & Electric Co.*, 245 Cal.Rptr. 436, 439-441 (Cal.App. 1 Dist. Jan 29, 1988) (Plaintiffs alleged that wires in low-voltage service drop from final distribution transformer to watt-hour meter had defective insulation. Arcing between the conductors allegedly caused molten aluminum to fall from utility’s wires, which allegedly ignited plaintiffs’ garage. Court in *Fong* at 439 noted that there was no defect in the electricity, but there was an alleged defect in the insulation of the wires. The court in *Fong* at 439 confused (1) high-voltage transmission and distribution lines, which are a service, with (2) delivery of low-voltage electricity to a customer of the utility. The court in *Fong* at 440 held that electricity becomes a product *after* it passes through the watt-hour meter. However, plaintiff’s alleged a problem upstream from the watt-hour meter, in the low-voltage wires owned and controlled by the utility. At 441: “Instead, the test is whether the electricity has been metered. By any accounting of plaintiffs’ evidence here, the fire occurred before the electricity reached the meter. Thus the electricity, if defective, was still in the distribution line and not in the stream of commerce.”), *review denied* (Calif. Apr 20, 1988);
- *Mancuso v. Southern Cal. Edison Co.*, 283 Cal.Rptr. 300 (Cal.App. 2 Dist. Jul 11, 1991) (Lightning struck distribution transformer that had no surge arrester. Electricity caused a fire on plaintiff’s premises. At 305: “... we find merit in Edison’s claim that lightning generated electricity is not a product generated or sold by it and thus cannot be relied upon by plaintiff as a basis for imposing strict liability on Edison.”<sup>12</sup> At 308: “The conclusion that lightning generated electricity cannot be a product flows from the fact that it has not been marketed nor placed in the ‘stream of commerce’ by any act of Edison.” The appellate court remanded the case to the trial court for trial on the issue of whether the utility negligently failed to connect a surge arrester at the distribution transformer.);
- *Stein v. Southern Cal. Edison Co.*, 8 Cal.Rptr.2d 907 (Cal.App. 2 Dist. Jun 18, 1992) (Utility disabled circuit breakers on transformer so it could supply twice its rated current, transformer degraded and put 16 kV distribution voltage on nominal 120/240 V wires to residence, watt-hour meter exploded, and arcing at meter caused fire that damaged residence. Appellate court affirmed verdict for homeowner.);
- *In re Pacific Gas and Electric Co.*, 271 B.R. 626, 638-639 (N.D.Cal. 4 Jan 2002) (Electricity supplied by one utility to another is a product.);

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<sup>12</sup> Note by Standler. It is silly to excuse the electric utility for delivering lightning current to a customer. The lightning current traveled on the utility’s wires, and the lightning would not have entered the customer’s premises but for the utility’s wires. Further, because only the electric utility can install surge-protective devices (which might mitigate or prevent damage to the customer) at the distribution transformer, the utility must be legally responsible for its act or omission.

### Colorado

- *Smith v. Home Light and Power Co.*, 734 P.2d 1051, 1055 (Colo. Mar 30, 1987) (Two men were killed when machinery contacted an overhead 7.2 kV distribution line. “We hold that at least until the electricity reaches a point where it is made available for consumer use, it is not a ‘product’ that has been ‘sold’ or otherwise ‘placed in the stream of commerce’ for the purpose of strict products liability under [Restatement Second of Torts] § 402A. Only at that point has the utility company released control over electricity that is expected to have been reduced to marketable voltage.”);

### Connecticut

- *Carbone v. Connecticut Light and Power Co.*, 482 A.2d 722 (Conn.Super. Jul 20, 1984) (Plaintiff alleged “surge of high voltage electrical current” that caused arcing and a fire inside a building. The court cites *Ransome* in Wisconsin, *Aversa* in New Jersey, and *Elgin Airport Inn*, 410 N.E.2d 620 (Ill.App. 1980) for proposition that electricity is a product. At 723: “Six cases cited by CL & P in other states as opposing *Ransome* all deal with high voltage transmission line situations. It would appear, therefore, that most recent decisions in other states hold a public utility strictly liable in situations where the electricity claimed to be defective has been released into the stream of commerce.” Denied utility’s motion to strike complaint.);
- *Curtiss v. Northeast Utilities*, 1994 WL 702690, 13 Conn. L. Rptr. 137 (Conn.Super. Dec 05, 1994) (Stray voltage case that confuses high-voltage electricity cases with low-voltage electricity cases. Holds that electricity is not a product.);
- *Walston v. Northeast Utilities*, Not Reported in A.2d, 1995 WL 785057 at \*4 (Conn.Super. 28 Dec 1995) (Plaintiffs alleged injury from electromagnetic fields from high-voltage distribution lines. “Consistent with *Carbone v. Connecticut Light & Power Co.*, supra, the plaintiffs may only recover under CPLA [Connecticut's Product Liability Act] from EMR [emitted electromagnetic radiation] which harms the plaintiffs after the electricity has been measured by their home's meter. Because the electricity in this case is not a product, the CPLA does not apply.”);
- *Travelers Indemnity Co. of America v. Connecticut Light and Power Co.*, 2008 WL 2447351 (Conn.Super. 4 June 2008) (Defective neutral connection to house caused fire. Follows *Carbone* and the Restatement Third of Torts (Products Liability) § 19. The court concluded: “It is the opinion of this court that the electricity is a product for the purposes of The Connecticut Product Liability Law once it passes through the meter of a consumer.”);

## Georgia

- *Monroe v. Savannah Elec. and Power Co.*, 471 S.E.2d 854 (Ga. Jun 24, 1996) (Driver of car electrocuted when mast of boat he was towing contacted overhead distribution line. At 856: "... we concur with the rationale presented in the majority view and accordingly hold that electricity is a product ....");

## Illinois

The intermediate appellate court in *Elgin Airport Inn* did apply products liability to low-voltage electricity, but the Illinois Supreme Court refused to rule on the issue, leaving the issue somewhat uncertain.

- *Genaust v. Illinois Power Co.*, 343 N.E.2d 465, 469-470 (Ill. 1976) (Plaintiff was injured while installing antenna, when high-voltage electricity in an uninsulated distribution line arced to his body. "Assuming, Arguendo, that electricity is a 'product,' it does not logically follow that the wires are its 'packaging.' .... The only 'product' that was in the process of being sold was the electricity itself, and plaintiff does not contend there was any defect in the electricity. .... In the present case plaintiff's own averments disclose that the electricity was not in the condition in which it was to be sold. .... It is obvious that the high-voltage electricity in question remained in the control of Illinois Power and was neither delivered nor sold to any consumer.");
- *Cratsley v. Commonwealth Edison Co.*, 347 N.E.2d 496, 499 (Ill.App. 23 April 1976) (Man who picked up fallen 2.2 kV distribution line was electrocuted. "... the transmission wires remained under the control of defendant, and contrary to plaintiff's allegations, were not sold to any consumer. Moreover, plaintiff does not plead a defect in the electrical current itself, but rather that the weakness of the wire[']s] insulation. No products liability. No discussion of product/service.);
- *Dubin v. Michael Reese Hospital*, 393 N.E.2d 588, 592-594 (Ill.App. 1979). (In case involving X-ray radiation, court mentioned in obiter dictum that electricity was a product.), *rev'd*, 415 N.E.2d 350, 352 (Ill. 1980) (X-rays were not defective, products liability does not apply).
- *Elgin Airport Inn, Inc. v. Commonwealth Edison Co.*, 410 N.E.2d 620 (Ill.App. 2 Dist. Sep 16, 1980) (Utility supplied only single-phase voltage to three-phase motors in air conditioning unit, which caused motor to burn out. Held that products liability applies, following *Ransome* and two other cases outside Illinois.), *rev'd in part*, 432 N.E.2d 259 (Ill. Feb 19, 1982) (At 260: "The evidence supports the circuit court's finding that Edison did nothing wrong." At 262: "... there is no need to consider the more fundamental questions Edison raises, such as whether electricity is a product at all, and whether a regulated utility can be strictly liable in tort.");

## Indiana

- *Helvey v. Wabash County REMC*, 278 N.E.2d 608 (Ind.App. 1 Dist. Feb 17, 1972) (Electric utility supplied at least 135 V to nominal 110 V appliances, causing damages to appliances. Appellate court held that electricity was a “good” under the Uniform Commercial Code.)
- *Petroski v. Northern Indiana Public Service Co.*, 354 N.E.2d 736 (Ind.App. 3 Dist. Sep 22, 1976) (14 y old boy climbed tree and touched an *uninsulated* 7 kV distribution line, seriously injuring him. At 747: “Electricity is a product which can be sold within the meaning of § 402A.” However, electricity in distribution lines had not yet been placed in stream of commerce.);
- *Hedges v. Public Service Co. of Indiana, Inc.*, 396 N.E.2d 933 (Ind.App. 1 Dist. Nov 27, 1979) (Aluminum ladder carried by Hedges touched an *uninsulated* overhead 7 kV distribution line, seriously injuring Hedges. At 935: Held electricity in distribution line is *not* a product, because electricity in distribution line was “in an unmarketable and unmarketed state.”);
- *Public Service Indiana, Inc. v. Nichols*, 494 N.E.2d 349 (Ind.App. 4 Dist. Jun 26, 1986) (Stray voltage case. At 355: “Indiana recognizes that electricity is a product which can be sold. The crucial question is whether the product has been placed into the stream of commerce prior to the injury causing accident. Electricity is considered to be placed into the stream of commerce when it reaches its destination in a home or factory. The electricity must be in a marketable and marketed state at the time it causes the injury to be treated as a product under strict liability, meaning that it has been reduced from a transmission voltage to a consumption voltage.” [citations to *Petroski* and *Hedges*]);
- *Rogers v. Grunden*, 589 N.E.2d 248, 256 (Ind.App. 5 Dist. 30 Mar 1992) (Man electrocuted when machine touched *uninsulated* 7.2 kV distribution lines above farm. “This jurisdiction does not impose strict liability on electric utilities for accidents involving their overhead electric lines even though electricity has been recognized as a dangerous entity [citing *Hedges*].”);
- *Bamberger & Feibleman v. Indianapolis Power & Light Co.*, 665 N.E.2d 933 (Ind.App. May 28, 1996) (Law firm sued in tort for economic loss during a two-day electrical outage. At 937: “Both the Indiana Product Liability Act and relevant case law establish that IPL cannot be liable under the Act for an electrical power outage where, as here, no product was delivered.” Further, the problem or defect causing the outage was in the distribution system, where electricity is *not* a product. Economic loss rule barred recovery from IPL under a negligence claim.);

- *Comer v. American Electric Power*, 63 F.Supp.2d 927 (N.D.Ind. 28 July 1999) (Plaintiff alleged loose neutral connection to distribution transformer. Arcing caused fire that damaged home. Jury verdict for plaintiff, but judge ruled for defendant, because of “unreliable” testimony by defendant’s expert witness. At page 939, judge rules that delivering more than 600 V on a nominal 120 V line would be “dangerously defective”. No discussion of product/service.);
- *Butler v. City of Peru*, 733 N.E.2d 912, 919 (Ind. 14 Aug 2000) (A school employee was electrocuted by 7.2 kV electricity while attempting to restore power to lighting for a baseball field. “The electricity may be a product under the Act. [citing *Nichols*] However, the Butlers give us no suggestion as to why the electricity — as distinct from the configuration of the equipment — was defective or unreasonably dangerous. .... In sum, it is understandable why the Butlers elected not to present their case under the Product Liability Act.”);

### New Jersey

- *Middlesex Water Co. v. Director, Division of Taxation*, 437 A.2d 368 (N.J.Tax Aug 25, 1981) (At 375-376: “Gas, electric and water companies may be differentiated from the telephone company on the ground that they sell a product — gas, electricity or water — not services.”)
- *Aversa v. Public Service Elec. and Gas Co.*, 451 A.2d 976, 980 (N.J.Super.Law Jul 06, 1982) (An electrical maintenance worker on his employer’s premises expected to find 600 V, but actually found 4160 V (the distribution voltage) and he was injured. Court adopted *Ransome*: “It is the holding of this court that the principles of strict liability in tort, as well as the implied warranties of merchantability and fitness for particular use, are applicable in cases where injuries are sustained from electricity placed in the stream of commerce.”);

### Oklahoma

- *Daniel v. Oklahoma Gas and Electric Company*, 329 P.2d 1060, 1062 (Okla. 1958) (Boy electrocuted while installing television antenna on porch, and antenna contacted high-voltage distribution line. Utility was not negligent, because its line was 32 feet above ground, exceeding the 20 feet minimum in the National Electric Safety Code. “This court has, without exception, held that an electric company transporting and selling electricity for a profit, a known deadly and dangerous, though useful **product**,<sup>13</sup> owes a greater degree of care and precaution in its use than that of property of a less dangerous character, the care and duty demanded being commensurate with the danger. It is not, however, an insurer against unforeseen and unavoidable accidents. [citing four cases]”)

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<sup>13</sup> Emphasis added by Standler. However, note that Daniel alleged negligence, *not* a defective product, so the court’s use of the word “product” may be *insignificant*.



- *Rotramel v. Public Service Co.*, 546 P.2d 1015, 1018 (Okla. Jun 17, 1975) (Case involves alleged negligence of electric utility when decedent's aluminum ladder touched an overhead 13.2 kV distribution line. "... the Court in *Daniel v. Oklahoma Gas and Electric Company*, supra, further held that a power company transporting and selling electricity for a profit, a known deadly and dangerous though useful **product**,<sup>14</sup> owes a greater degree of care and precaution in its use than that of property of a less dangerous character.");
- *Woodis v. Oklahoma Gas and Elec. Co.*, 704 P.2d 483, 486 (Okla. Jul 23, 1985) (Boy, 15 y old, climbed transmission line tower and was killed when high-voltage electricity arced to him. Held violation of the provisions of the National Electrical Safety code constitutes negligence per se. Quotes *Rotramel*.);

### Pennsylvania

- *Schriner v. Pennsylvania Power & Light Co.*, 501 A.2d 1128 (Pa.Super. Dec 06, 1985) (Stray voltage case. At 1133: "We agree with the reasoning of the Wisconsin court [*Ransome*], and hold that electricity can be a 'product' within the meaning of § 402A." At 1134: "... while still in the distribution system, electricity is a service, not a product; electricity only becomes a product, for purposes of strict liability, once it passes through the customer's meter and into the stream of commerce. [citing *Smith*, 695 P.2d 788 (Colo.App. 1984)]");
- *Bellotti v. Duquesne Light Co.*, 44 Pa. D. & C.3d 425 (Pa.Com.Pl. Apr 16, 1987) (Plaintiffs sued for alleged "power surge"<sup>15</sup> that damaged their property. "Plaintiffs concede that any tort cause of action is barred by the [two-year] statute of limitations." Plaintiffs alleged breach of warranty. Trial court says electricity is a "good" under the Uniform Commercial Code, and *not* a service. Defendant's motion for judgment on the pleadings was denied.);
- *Smithbower v. Southwest Cent. Rural Elec. Co-op., Inc.*, 542 A.2d 140, 144 (Pa.Super. 25 May 1988) (Three men were electrocuted when farm equipment they were moving contacted an overhead high-voltage distribution line. "In the instant case, electricity had not yet been placed into the stream of commerce since it had not yet passed through the meter at the Varner farm. Although a sale of electricity took place between Pennsylvania Electric and Southwest Central, we find that, because the electricity had not yet left the transmission lines, a sale of the electricity as a 402A product had not occurred."), *appeal denied*, 555 A.2d 116 (Pa. 1988);

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<sup>14</sup> Emphasis added by Standler. However, note that *Rotramel* alleged negligence, *not* a defective product, so the court's use of the word "product" may be *insignificant*.

<sup>15</sup> "Power surge" is bad jargon. A surge is a transient overvoltage. A surge is characterized by peak current, peak voltage, duration, etc., but *not* characterized by power.

- *Frampton v. Pennsylvania Power and Light Co.*, 5 Pa. D & C4th 285 (Pa.Com.Pl. Jan 8, 1990) (Man electrocuted by overhead distribution line. Trial court followed *Schriner*, holds no strict liability for alleged defects in utility poles and overhead distribution line.);
- *Vertis Group, Inc. v. Pennsylvania Public Utility Commission*, 840 A.2d 390 (Pa.Cmwlt. Dec 05, 2003) (Plaintiff alleged that electricity supplied by Duquesne Power was not adequate for continuous operation of computers. Buried in the judicial opinion is a terse paragraph, at page 393, that indicates the source of the problems was a “substandard and improperly wired” computer network that was corrected by a subsequent tenant in the building. );

## Texas

- *Erwin v. Guadalupe Valley Electric Co-Op.*, 505 S.W.2d 353, 355 (Tex.Civ.App. 1974) (Man was electrocuted while moving football goalpost that contacted 14.4 kV distribution line. “... the risk of injury does not arise from defective manufacture or assembly of the electricity itself, or from a defective design. .... Here, as pointed out, plaintiffs alleged no defects in the manufacture of the electricity.”);
- *Houston Lighting & Power Co. v. Reynolds*, 712 S.W.2d 761, 766-767 (Tex.App.–Houston 1986) (Boy deliberately touched 35 kV distribution line with aluminum pole. Intermediate appellate court erroneously<sup>16</sup> held that electricity in high-voltage distribution line was a product in the stream of commerce. Correctly held at 766: “While the distribution of the electricity through a system of towers, poles, and wires may well be considered a service, the electricity itself is a consumable product. [citing five cases]”), *rev’d*, 765 S.W.2d 784, 785 (Tex. Nov 30, 1988) (in dicta, since this case involves a 35 kV distribution line: “We agree with the better reasoned opinions of other jurisdictions which hold electricity to be a product. Electricity is a commodity, which, like other goods, can be manufactured, transported and sold. *Pierce v. Pacific Gas & Elec. Co.*, 166 Cal.App.3d 68, 81, 212 Cal.Rptr. 283, 290 (1985). Electricity is a form of energy that can be made or produced by man, confined, controlled, transmitted and distributed to be used as an energy source for heat, power and light. *Ransome v. Wisconsin Elec. Power Co.*, 87 Wis.2d 605, 610, 275 N.W.2d 641, 643 (1979).”);
- *Southwestern Elec. Power Co. v. Grant*, 20 S.W.3d 764 (Tex.App.–Texarkana Mar 30, 2000) (Tree limb fell during thunderstorm and caused fluctuating voltage in consumer’s home. The day after repairs were made, the wife was in the kitchen when she saw a “streak of light hit her in the face and went up her nose”. The light apparently came from one of the appliances

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<sup>16</sup> Erroneously according to the Texas Supreme Court. 765 S.W.2d 784, 785-786 (Tex. 1988) (“The courts of our sister states are not in agreement as to whether electricity is a product or a service, but they are all in agreement that contact with a high voltage transmission line does not come within the purview of Section 402A. [citing ten cases]”).

that had been damaged the previous night. At 771: "... the sale of electricity comes under the umbrella of the Uniform Commercial Code." Intermediate appellate court erroneously held at 772: "... we find that allowing a public utility through a tariff to limit personal injury damages is against public policy."), *rev'd in part*, 73 S.W.3d 211, 223 (Tex. Mar 28, 2002) ("We hold that the UCC does not apply to the SWEPCO tariff provision limiting liability for personal injury resulting from SWEPCO's ordinary negligence; therefore, the limitation on liability is not prima facie unconscionable under the UCC.");

### Wisconsin

- *Kemp v. Wisconsin Elec. Power Co.*, 172 N.W.2d 161, 166 (Wis. 25 Nov 1969) (A boy, Daniel Kemp, flew model airplane into uninsulated 138 kV transmission line that was 29 feet above the ground. The electricity traveled down a cable connecting the airplane with the controller, injuring the boy. Wisconsin Supreme Court reversed trial court's summary judgment for utility. "The electricity which injured Daniel Kemp had not been sold but was still in the control of the defendant." No products liability. No discussion of product/service.);
- *Ransome v. Wisconsin Elec. Power Co.*, 275 N.W.2d 641 (Wis. Feb 27, 1979) (Failure of utility's distribution transformer energized nominal 120/240 V wires between 1 and 4 kV, causing fire in plaintiff's house. This landmark case decided that the electricity was defective and products liability would apply. At 643: "The distribution might well be a service, but the electricity itself, in the contemplation of the ordinary user, is a consumable product.");
- *Kolpin v. Pioneer Power & Light Co., Inc.*, 469 N.W.2d 595 (Wis. May 21, 1991) (Stray voltage case.);
- *Beacon Bowl, Inc. v. Wisconsin Elec. Power Co.*, 501 N.W.2d 788 (Wis. 9 June 1993) (At 795: "At trial, the insurers contended that on the day of the fire, trees contacted [a high-voltage] feeder near the Warehouse Shoes store, that the contact caused a succession of high-voltage transients to be transmitted into Beacon Bowl, and that these transients damaged insulation on a wire inside the main distribution box, resulting in arcing and the ensuing fire." At 809: "... we have examined the record and have found credible evidence to support the jury's answer that the electricity WEPCO supplied to Beacon Bowl on the day of the fire was both defective and unreasonably dangerous.");

## quotations from leading cases

Because *Ransome* is the leading case in the USA on this topic, it is worth quoting some of *Ransome* here. First, *Ransome* contains a terse discussion of products liability law, quoted from an earlier Wisconsin Supreme Court case:

The term strict liability might be misconstrued and, of so, would be a misnomer. Strict liability does not make the manufacturer or seller an insurer nor does it impose absolute liability. From the plaintiff's point of view the most beneficial aspect of the rule is that it relieves him of proving specific acts of negligence and protects him from the defenses of notice of breach, disclaimer, and lack of privity in the implied warranty concepts of sales and contracts.

From a reading of the plain language of the rule [i.e. Restatement Second of Torts, § 402A], the plaintiff must prove

- (1) that the product was in defective condition when it left the possession or control of the seller,
- (2) that it was unreasonably dangerous to the user or consumer,
- (3) that the defect was a cause (a substantial factor) of the plaintiff's injuries or damages,
- (4) that the seller engaged in the business of selling such product or, put negatively, that this is not an isolated or infrequent transaction not related to the principal business of the seller, and
- (5) that the product was one which the seller expected to and did reach the user or consumer without substantial change in the condition it was when he sold it.

*Dippel v. Sciano*, 155 N.W.2d 55, 63 (Wis. 1967),

part quoted and part paraphrased by *Ransome*, 275 N.W.2d 641, 646-647 (Wis. 1979). After quoting from *Dippel*, the court in *Ransome* continues:

Furthermore, certain defenses are available to the manufacturer or seller: contributory negligence, misuse, abuse or alteration of the product, inherent or unavoidable danger, natural wear, assumption of risk. [citing *Dippel* at 63-64]

*Ransome*, 275 N.W.2d at 647.

The electricity which passed through the electric meter controlled by the defendant electric power company and into the plaintiffs' house had a voltage between 1000 and 4000 volts. It was undisputed that 120-240 volts was the voltage normally distributed to residential consumers and was the voltage the plaintiffs had actually purchased for their house. The evidence was also clear and uncontroverted that such high voltage was unreasonably dangerous for use in a residential home and did in fact cause the fire which occurred on September 28, 1974. While 4800 volt electricity may be safe and suitable for some purposes, it is clear from the evidence in this case that such voltage as applied to an ordinary private residence is "defective" and "unreasonably dangerous" within the meaning of the products liability doctrine as adopted in Wisconsin. Indicative of the fact that the possibility of such an excessively high electrical overload rendered the electricity dangerous to an extent beyond that which would be contemplated by the ordinary consumer who purchased it is the fact that ordinary homes are protected by circuit breakers or fuses with a maximum voltage rating of only 600 volts.

*Ransome*, 275 N.W.2d at 649.

The relevant public policy considerations weigh heavily in favor of the consumer in the present case. Consumer self-protection from the defective and unreasonably dangerous product, namely, electricity of an excessively high voltage, is not feasible in the case of the ordinary consumer. Abstention from use of the product is unrealistic; electric power supplied by a sole electric company is generally the sole source of electricity. In addition, the seller here is in a better position to anticipate, protect against and eliminate possible dangerous electricity overloads of this type. Finally, the seller can more easily absorb or spread or insure against any financial losses which result. [footnote omitted] Public policy considerations do not preclude the imposition of liability in this case.

*Ransome*, 275 N.W.2d at 650.

A California appellate court in *Pierce* echoed *Ransome*:

We readily acknowledge that PG & E's liability should not depend simply upon whether electricity is or is not labeled a "product." More significantly, we believe the policy justifications for strict liability in tort support its imposition in this case. (See *Daly v. General Motors Corp.* (1978) 20 Cal.3d 725, 736, 144 Cal.Rptr. 380, 575 P.2d 1162.) This court has identified four main policy grounds for the doctrine: (1) to provide a "short cut" to liability where negligence may be present but is difficult to prove; (2) to provide an economic incentive for improved product safety; (3) to induce the reallocation of resources toward safer products; and (4) to spread the risk of loss among all who use the product. [citations to California case omitted]

Proof of negligence in cases such as this requires a plaintiff to present to a jury evidence of the inner workings of an electrical power system of vast and complex proportions. The technical operation of such systems and of electricity itself is far beyond the knowledge of the average juror. The expert witnesses who can explain such systems to the jury are concentrated within the industry itself and may be reluctant to serve as expert witnesses in plaintiff's cases. Moreover, PG & E is in a much better position than a consumer-plaintiff to diagnose — and ultimately to correct — the failures which inevitably occur in systems of such magnitude.

In addition, where, as here, a huge surge<sup>17</sup> of injury-causing electricity is traceable to a defective component (the transformer) in the utility's system, imposition of strict liability creates an incentive for utilities to *avoid* accidents before they occur, by investing in safer products. Although, as PG & E notes, its current practices and procedures are extensively regulated by the PUC and its General Order 95, the PUC has certainly not forbidden testing transformers before they are connected to 12,000-volt powerlines. Nothing in the record suggests the PUC is of the view that electric utility procedures are incapable of being made safer.

Finally, strict liability in tort spreads the costs of personal injuries among millions of consumers of electricity instead of imposing those costs upon blameless victims chosen by chance. It is proper that those who seek to benefit from a product should bear the associated costs and should not ask the unfortunate but inevitable victims selected (literally) by accident to bear the burden unaided.

*Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283, 291-292 (Cal.App. 3 Dist. 1985).

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<sup>17</sup> This case is about a temporary overvoltage, *not* a surge.

## early history

The earliest case that I can find in the USA where low-voltage electricity both (1) caused damage and (2) was held by a court to *not* be a service is *Helvey v. Wabash County REMC*, 278 N.E.2d 608 (Ind.App. 1972). To be clear, *Helvey* held the electricity to be a “good” under the Uniform Commercial Code (UCC), not a products liability case. *Helvey* tersely says:

Helvey concedes that electricity is legally considered to be personal property, that it is subject to ownership, and that it may be bartered and sold. *Hill v. Pacific Gas & Electric Co.* (1913), 22 Cal.App. 788, 136 P. 492. *Terrace Water Company v. San Antonio Light and Power Company et al.* (1905), 1 Cal.App. 511, 82 P. 562; *Sixty Seventh South Munn v. Board of Public Utility Commissioners* (1929), 106 N.J.Law 45, 147 A. 735. We further note that electricity may be stolen; IC 1971 35-1-66-3, Ind. Ann. Stat. s 10-4519 (Burns 1956); and taxed, *Gross Income Tax Division v. Chicago District Electric Generating Corp.* (1956), 236 Ind. 117, 139 N.E.2d 161.

*Helvey*, 278 N.E.2d at 610.

*Helvey* wanted the court to find that electricity was a service, which had a six-year statute of limitations, instead of a good under the UCC, which had a four-year statute of limitations. *Helvey* had filed litigation two months after the expiration of a four-year statute of limitations. For this reason, *Helvey*, the plaintiff, was arguing that electricity is a service, which is an argument normally made by a defendant-utility.

Incidentally, the fact that “electricity may be stolen” is not dispositive of whether electricity is a product or service. For example, cable television is commonly considered by courts as a service, yet criminals can steal cable television service. See, e.g., *Jordan v. Indiana*, 466 N.E.2d 734 (Ind.App. 1984); *Rhode Island v. Smith*, 662 A.2d 1171, 1175 (R.I. 1995) (noting state statute criminalizing theft of telephone service, cable television service, etc.).

Here I want to focus on the two old California cases cited in *Helvey*. In 1905, an intermediate appellate court in California considered a breach of a contract for the purchase/sale of low-voltage electricity to operate water pumps.

The contract set out in the complaint was in reference to the sale and delivery of personal property. The thing of which there may be ownership is called property under our Code. Civ.Code, § 654. There may be ownership of all inanimate things which are capable of appropriation or of manual delivery. Civ.Code, § 655. Every kind of property that is not real is personal. Civ.Code, § 663. It may be regarded as a solecism to say that one may own a thing not susceptible of definition and the nature and character of which is practically unknown, yet when one gathers from the elements an energy or force which he may store, transmit, and utilize, he thereby appropriates to his own use that thing, whatever it may be, and it is a subject of ownership, of barter and sale, so long as it is in possession. The defendant by the contract agreed to sell the energy in which it had an ownership, and to deliver the same at stated times in fixed amounts; and, as appears from the contract, the price thereof had not been fully paid in advance.

*Terrace Water Co. v. San Antonio Light & Power Co.*, 82 P. 562, 563 (Cal.App. 2 Dist. 1905).

Note that the judge in this old case correctly focused on the energy in the electricity: “agreed to sell the energy”.

The other old California case cited by *Helvey* quotes *Terrace Water*:

Petitioner reiterates a point we did not heretofore consider, namely, that electricity is incapable of being made the subject of purchase and sale. The point is disposed of very satisfactorily in *Terrace Water Co. v. San Antonio Elec. Co.*, 1 Cal. App. 511, 82 Pac. 562, as follows: “There may be ownership of all inanimate things which are capable of appropriation by manual delivery. Civ. Code, § 655. \* \* \* It may be regarded as a solecism to say that one may own a thing not susceptible of definition and the nature and character of which is practically unknown, yet when one gathers from the elements an energy or force which he may store, transmit, and utilize, he thereby appropriates to his own use that thing, whatever it may be, and it is a subject of ownership, of barter and sale, so long as it is in his possession.” *Hill v. Pacific Gas & Electric Co.*, 136 P. 492, 500 (Cal.App. 3 Dist. 1913).

The third case cited by *Helvey* was from New Jersey, and also hold that electricity is property.

It is an accepted proposition that electric current is property, and it is admitted for the purposes of this case that it is a commodity;.... .... It should be noted that, since all parties to the cause concede and base their contentions upon the proposition that electric current is property, .... *Sixty-Seven South Munn v. Board of Public Utility Commissioners of New Jersey*, 147 A. 735, 736 (N.J.Law. 1929), *aff’d without opinion*, 152 A. 920 (N.J.Err. & App. 1930) (per curiam), *cert. den.*, 283 U.S. 828 (1931).

In 1962, a California court considered bidding on a contract to supply equipment to the city of San Francisco. *Baldwin-Lima-Hamilton Corp. v. Superior Court In and For City and County of San Francisco*, 25 Cal.Rptr. 798 (Cal.App. 1962) (“Electricity is a commodity which, like other goods, can be manufactured, transported and sold. (See *Terrace Water Co. v. San Antonio Light & Power Company* (1905) 1 Cal.App. 511, 513, 82 P. 562.)”).

Commenting on *Helvey*, a law student wrote:

It is interesting to note that *Helvey* relied on two very old California cases [footnote to *Hill v. Pacific Gas & Electric Co.* which quotes *Terrace Water Co.*] in coming to its conclusion. However, those cases have never been cited by a modern California court for the proposition that electricity is a “good” or a product subject to implied warranty or strict liability laws. Gregory G. Hollows, Note, “Torts of Electric Utilities: Can Strict Liability Be Plugged In?” 11 LOYOLA OF LOS ANGELES LAW REVIEW 775, 782 (Sep 1978). Mr. Hollows — working in the days before searchable databases like Westlaw and Lexis — seems to have overlooked the *Baldwin-Lima-Hamilton* case mentioned in the previous paragraph of this essay. As Mr. Hollows says, products liability law began with the *Greenman v. Yuba Power Products*, 377 P.2d 897 (Cal. 1963) case involving a lathe in a home workshop, yet when Hollows wrote his note in 1978, no appellate court in California had considered products liability for defective electricity.<sup>18</sup> Some

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<sup>18</sup> Hollows, 11 LOYOLA OF LOS ANGELES LAW REVIEW at 775, 778.

22 years after *Greenman*, a California appellate court applied products liability to low-voltage electricity in the landmark case of *Pierce*. I have no explanation for the 22 y delay.

In 1985, a California appellate court adopted products liability for low-voltage electricity in *Pierce*, which says:

Over twenty years ago the California Court of Appeal recognized that “Electricity is a commodity which, like other goods, can be manufactured, transported and sold.” *Baldwin-Lima-Hamilton Corp. v. Superior Court* (1962) 208 Cal.App.2d 803, 819, 25 Cal.Rptr. 798.) [footnote about gas omitted here] Although we have found no California case which has considered the issue in the strict tort liability context, the courts of other states have had little trouble in concluding that electricity delivered to homes and businesses is a “product.” (See, e.g., [citing six cases] ....

*Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283, 290 (Cal.App. 3 Dist. 1985).

The citation in *Pierce* to *Baldwin-Lima-Hamilton* indirectly continues the history back to *Terrace Water* in 1905, because *Baldwin* cites *Terrace Water*.

In the year 2008, *Terrace Water* was cited again by an appellate court in California. *Searles Valley Minerals Operations, Inc. v. State Board of Equalization*, 72 Cal.Rptr.3d 857, 862 (Cal.App. 4 Dist. 2008) (“... *Terrace Water Co. v. San Antonio Light & Power Co.* (1905) 1 Cal.App. 511, 513, 82 P. 562 [holding that electricity is personal property].) Here, the evidence at trial established, and the trial court found, that electricity can be measured and felt and is perceptible to the senses, matters that the Board does not truly dispute.”).

## Some States Are Confused

### Kentucky

Kentucky law is not clear, because no Kentucky state court has addressed the service/product distinction in electricity supply. Two federal district courts in Kentucky that considered this distinction appear to have taken opposite positions, perhaps because of factual differences in the two cases.

- *Kentucky Power Co. v. Kilbourn*, 307 S.W.2d 9 (Ky. 7 June 1957) (Utility was negligent in supplying low voltage that caused motors to overheat, causing fire.);
- *G & K Dairy v. Princeton Elec. Plant Bd.*, 781 F.Supp. 485 (W.D.Ky. Sep 25, 1991) (Stray voltage case. At 489: “The defendant does not generate electricity. Rather, it receives electricity from TVA and distributes that power to its customers.<sup>19</sup> Thus, under Kentucky law, the defendant does not manufacture a ‘product’; it provides a service. See also *Otte v. Dayton Power and Light Co.*, 37 Ohio St.3d 33, 523 N.E.2d 835, 838 (1988) (electricity distribution is a service).”);

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<sup>19</sup> In my opinion, this is a strange statement. One can sue importers of a product, who did not manufacture the product, under products liability law. Princeton Electric Plant Board simply imported the electricity from the TVA.



- *Bryant v. Tri-County Elec. Membership Corp.*, 844 F.Supp. 347 (W.D.Ky. Feb 02, 1994) (At 349: “ The majority of the state courts considering this issue have encountered little difficulty deciding that electricity is a product. [footnote omitted, cites 8 states that declared electricity to be a product and 2 states that declared electricity to always be a service]” At 352: “The Kentucky courts would therefore probably conclude, in concert with the decisions of most other states, that the imposition of strict liability upon electric utilities will advance the twin policies of spreading the risk of loss among all product consumers and discouraging the sale of defective goods.” Denied defendant’s motion for summary judgment. At 355: “**Postscript:** A jury trial of this lawsuit took place in February 1994, and concluded with a verdict in favor of Defendant Tri-County Electric on all causes of action, including Plaintiffs' strict liability claim.”);

### Massachusetts

Massachusetts does not recognize products liability, but reaches similar results with a breach of warranty theory.<sup>20</sup>

- *Town of Concord, Mass. v. Boston Edison Co.*, 676 F.Supp. 396, 398 (D.Mass. 5 Jan 1988) (Plaintiffs distribute electric power to retail customers, sued defendant that generated power, alleging anti-trust violation. Held that electricity was a product, not a service. This is not a products liability case.);
- *New Balance Athletic Shoe, Inc. v. Boston Edison Co.*, Not Reported in N.E.2d, 1996 WL 406673 at \*3 (Mass.Super. 1996) (An “electrical power surge”<sup>21</sup> allegedly caused a fire. “... this court finds that electricity is not a ‘good’ as defined in the Uniform Commercial Code.”);
- *In re Erving Industries, Inc.*, 432 B.R. 354, 366-370 (Bkrtcy.D.Mass. 2010) (“Because the Court concludes that electricity is movable at the time it is identified to the contract, electricity constitutes a good within the meaning of the UCC and [11 U.S.C.] § 503(b)(9).”);

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<sup>20</sup> See, e.g., *Swartz v. General Motors Corp.*, 378 N.E.2d 61, 62 (Mass. 1978) (“We hold that there is no ‘strict liability in tort’ apart from liability for breach of warranty under the Uniform Commercial Code, G.L. c. 106, §§ 2-314 2-318.”); *Back v. Wickes Corp.*, 378 N.E.2d 964, 969 (Mass. 1978) (“The Legislature has made the Massachusetts law of warranty congruent in nearly all respects with the principles expressed in Restatement (Second) of Torts § 402A (1965). For this reason, we find the strict liability cases of other jurisdictions to be a useful supplement to our own warranty case law. [citations to other states' cases]”); *Vassallo v. Baxter Healthcare Corp.*, 696 N.E.2d 909, 923 (Mass. 1998) (quoting with approval *Back v. Wickes*).

<sup>21</sup> “Power surge” is bad jargon. A surge is a transient overvoltage. A surge is characterized by peak current, peak voltage, duration, etc., but *not* characterized by power.

## Michigan

Some authorities<sup>22</sup> have included Michigan in the states that recognize low-voltage electricity as a product, but I can not find a clear statement in Michigan judicial opinions.

- *Buckeye Union Fire Insurance Co. v. Detroit Edison Co.*, 196 N.W.2d 316, 317-318 (Mich.App. 22 Feb 1972) (House fire allegedly caused by defective electricity. Held electricity is a service, but implied warranties of fitness and merchantability applies. “We are of the opinion that the implied warranties, as defined by the courts of this state, should apply to the sale of services as well as to the sale of goods. We see no reason upon which a logical distinction can be based, especially when, as here, we are dealing with the production and sale of a form of energy which, under certain circumstances, can be inherently dangerous.” Plaintiffs lost because they were unable to show that there was a defect in the electricity.);
- *Williams v. Detroit Edison Co.*, 234 N.W.2d 702, 705-707 (Mich.App. 1975) (Foreman of excavation crew operated back hoe that accidentally touched 7.2 kV distribution line that was 28 feet above ground, foreman was electrocuted. At 705: “Electricity is a service rather than a ‘good,’ but the doctrine of implied warranty has been held to apply to its sale. [citing *Buckeye Union Fire Ins.*]” At 706: “Having determined that the doctrine of implied warranty in tort applies to a ‘products’ liability case involving electricity, and that the UCC and other contractual concepts to not apply to such a case, ....” At 707: “The ill-fated contact with defendant’s wire and its subsequent descent onto plaintiff’s decedent did not involve placing the electricity ‘into the stream of commerce’, and was not type of transfer which triggers the application of the doctrines at issue.”);
- *Kulhanjian v. Detroit Edison Co.*, 251 N.W.2d 580 (Mich.App. 17 Jan 1977) (Affirming million dollar verdict for person on roof of building who touched 13.2 kV distribution line and was injured. Uninsulated wire was less than eight feet above roof of building.);
- *Venters v. Michigan Gas Utilities Co.*, 493 F.Supp. 345, 351 (W.D.Mich. 1980) (“The [Michigan] court of appeals, however, refused to follow *Williams* in *Kulhanjian v. Detroit Edison Company*, 73 Mich.App. 347, 251 N.W.2d 580 (1977). The court attempted to distinguish the cases by explaining that *Williams* involved wires strung over a public road, whereas *Kulhanjian* involved wires attached to a pole on private property. Despite the purported importance of this distinction, it is clear that the *Williams* ‘control’ test is in doubt because the manner in which the wires were installed in *Kulhanjian* was no less under the control of the power company.”);

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<sup>22</sup> See, e.g., RESTATEMENT THIRD OF TORTS: PRODUCTS LIABILITY, § 19, Reporters’ Note to comment *d*, p. 279 (1997) (citing *Williams*); *Elgin Airport Inn, Inc. v. Commonwealth Edison Co.*, 410 N.E.2d 620, 623-624 (Ill.App. 1980) (considering *Williams* as products liability), *rev’d*, 432 N.E.2d 259 (Ill. 1982) (does not mention *Williams*).

- *Schultz v. Consumers Power Co.*, 506 N.W.2d 175 (Mich. 31 Aug 1993) (Man electrocuted when aluminum ladder came near overhead, uninsulated 4.8 kV distribution line near a home. Jury found utility negligent and Michigan Supreme Court affirmed. At 178-179: "... a reasonable person could certainly anticipate that a painter could be electrocuted if his aluminum ladder came close to, or touched, a pitted, corroded and frayed electric wire. .... Those engaged in transmitting electricity are bound to anticipate ordinary use of the area surrounding the lines and to appropriately safeguard the attendant risks." At 180: "Compliance with the NESC or an industry-wide standard is not an absolute defense to a claim of negligence." No discussion of product/service.);

### **Some States Never Considered Low-Voltage as Product**

In some states, the only cases I can find on this topic involve high-voltage electricity in a distribution line. Therefore, it is *not* known how these states would rule on a products liability case involving low-voltage electricity.

#### **Alaska**

- *Keogh v. W.R. Grasle, Inc.*, 816 P.2d 1343 (Alaska 30 Aug 1991) (Worker who climbed utility pole was injured by accidental contact with 7.2 kV distribution line. Affirmed jury verdict for defendant, the contractor who designed and built the distribution system. No discussion of product/service. Held distribution system was a product(!));

#### **Maine**

- *Fuller v. Central Maine Power Co.*, 598 A.2d 457, 460-461 (Me. 28 Oct 1991) (Man's aluminum ladder touched 7.2 kV distribution line, electrocuting him. "While courts may be in some disagreement as to whether or at what point electricity becomes a product as opposed to a service, there is strong unanimity among courts that in the state of flowing through a high-voltage transmission line, electricity is not a product within the meaning of the Restatement (Second) of Torts § 402A, [footnote five cites 11 cases] ....");

#### **Nebraska**

- *Rodgers v. Chimney Rock Public Power Dist.*, 345 N.W.2d 12, 16 (Neb. 1984) (Man electrocuted when metal pipe touched 7.2 kV distribution line. "Power companies engaged in the transmission of electricity, especially electricity of high voltage, are charged with the duty of exercising a very high degree of care to safeguard those whose lawful activities expose them to the risk of inadvertent contact with the electric lines[,] but they are not insurers and not liable for damages in the absence of negligence. [quoting *Lorence v. Omaha Public Power District*, 214 N.W.2d 238, 240 (Neb. 1974); citing *Gillotte v. Omaha Public Power Dist.*, 176 N.W.2d 24, 27 (Neb. 1970).]");

### **New Hampshire**

- *Wood v. Public Service Co. of New Hampshire*, 317 A.2d 576, 579-580 (N.H. 1974) (Man was electrocuted when aluminum ladder touched an uninsulated 7.2 kV distribution line. “Although the generating and distribution of electricity has been held a dangerous activity, electric companies have not been held strictly or absolutely liable for injuries suffered from contact with its power lines. *Eastern Shore Pub. Serv. Co. v. Corbett*, 227 Md. 411, 425, 177 A.2d 701, 709 (1962); 26 Am.Jur.2d Electricity, Gas, And Steam § 39 (1966); see Annot., 69 A.L.R.2d 9, 15 (1960). .... No compelling reason of policy or logic has been advanced to apply strict liability to electric companies.”);

### **Vermont**

- *Darling v. Central Vermont Public Service Corp.*, 762 A.2d 826, 828 (Vt. 21 Sep 2000) (Tree limb contacted 7.2 kV high-voltage distribution line, carrying electrical current into earth. Abnormal current allegedly caused a fire in plaintiff’s house and garage. “In this case, we need not reach the question of whether electricity is a service or a product because we hold that, even if electricity is a product, CVPSC did not sell the electricity alleged to have caused the fire.”);

## **In Some States: Electricity Always a Service**

The following modern<sup>23</sup> cases, listed below alphabetically by states, continue the old rule of law that providing electricity is a service. Note that some of these cases in this section involve only high-voltage electricity in distribution lines, and the case is silent about whether low-voltage electricity is a product. I remind the reader that if appellate courts in these states were to consider a low-voltage electricity case today, they *might* overrule the old law. Therefore, one should use caution when relying on the following cases.

### **Florida**

During my searches of Westlaw in April 2011, I found appellate cases in Florida have apparently not yet grappled with whether electricity is a product or a service, or whether products liability applies to electricity. Tort cases against electric utilities in Florida appear to require proof of negligence by the utility.

- *U. S. Fluorescent [sic] Mfg. Co. v. Florida Power & Light Co.*, 360 So.2d 476 (Fla.App. 1978) (Plaintiff alleged "defective power service" caused fire, but plaintiff presented no evidence of negligence by utility. Directed verdict for utility was affirmed on appeal. No discussion of product/service.);

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<sup>23</sup> “Modern” meaning since *Ransome* in February 1979.

- *City of Gainesville v. Florida Power & Light Co.*, 488 F.Supp. 1258, 1280-1283 (S.D.Fla. 1980) (Electricity is a “commodity” under the Robinson-Patman Act, part of federal anti-trust statutes). Cited with approval in *City of Kirkwood v. Union Elec. Co.*, 671 F.2d 1173, 1181, n.19 (8thCir. 1982).
- *Landrum v. Florida Power & Light Co.*, 505 So.2d 552 (Fla.App. 3 Dist. April 1987) (During electrical outage, homeowner lit candle, which caused fire in house. Judgment for electric utility, because of limitation of liability for ordinary negligence contained in tariff. No discussion of product/service.). Discussed in <http://www.rbs2.com/outage.pdf> .
- *Estate of Marimon ex rel. Falcon v. Florida Power & Light Co.*, 787 So.2d 887 (Fla.App. 3 Dist. April 2001) (Boy electrocuted by overhead distribution line while picking avocados with metal pole. "Marimon's possible comparative negligence does not totally absolve FPL of liability if it did not properly maintain its lines." No discussion of product/service.).
- *Florida Power & Light Co. v. Goldberg*, 856 So.2d 1011, 1033-1034 (Fla.App. 3 Dist. 2002) (en banc) (Utility owed no legal duty to furnish continuous electricity to traffic signal (i.e., no liability for outages). When traffic signal ceased to function during outage, outage was not the proximate cause of injuries in motor vehicle collision. No discussion of product/service.); *quashed*, 899 So.2d 1105 (Fla. April 2005) (Utility had duty to warn (e.g., notify police) when it intentionally deactivated traffic signal during repairs to downed line. “... accident was an entirely foreseeable consequence of FPL’s negligence in creating a dangerous condition of deactivating the traffic signal.” No discussion of product/service.); Discussed in <http://www.rbs2.com/outage.pdf> .

## Maryland

- *Singer Co., Link Simulation Systems Div. v. Baltimore Gas and Elec. Co.*, 558 A.2d 419, 423-424 (Md.App. Jun 05, 1989) (Plaintiff sued for series of outages, each lasting from minutes to more than four hours. Court held electricity not a “good” under the Uniform Commercial Code.);

## Minnesota

- *Computer Tool & Engineering, Inc. v. Northern States Power Co.*, 453 N.W.2d 569 (Minn.App. 1990) (Telephone company accidentally cut power cable, producing a “power surge”<sup>24</sup> that damaged computer equipment. Appellate opinion upheld electric utility’s rate tariff, which said: “The Company will not be responsible for any loss or damage resulting from the interruption or disturbance of service for any cause other than gross negligence of the Company.”);

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<sup>24</sup> “Power surge” is bad jargon. A surge is a transient overvoltage. A surge is characterized by peak current, peak voltage, duration, etc., but *not* characterized by power.

- *ZumBerge v. Northern States Power Co.*, 481 N.W.2d 103, 107-108 (Minn.App. Feb 18, 1992) (stray voltage case. “The trial court ruled that the provision of electricity was a sale of goods under Article 2 [of the Uniform Commercial Code]. However, the decision to treat electricity as subject to Article 2 is a legal question as yet unsettled in Minnesota. Other jurisdictions which have considered the issue, primarily in the context of strict liability, are not in agreement. [citing three cases] Nonetheless, the trial court's conclusion that NSP's sale of electricity is controlled by Article 2 was not dispositive of its conclusion that the ZumBerges could recover their losses.”), *review denied* (Minn. Apr 29, 1992);

### Missouri

- *Hills v. Ozark Border Elec. Co-op.*, 710 S.W.2d 338 (Mo.App. S.D., March 31, 1986) (Plaintiffs alleged fire inside building was caused by abnormally high voltage furnished by utility. Utility admitted neutral wire had become disconnected at distribution transformer. Appellate court reversed jury verdict for plaintiff, because plaintiff had not proved that electricity was defective. At 341: “Plaintiffs made no attempt to present evidence that might have eliminated other conditions that could have caused the fire.”);
- *Balke v. Central Missouri Elec. Cooperative*, 966 S.W.2d 15, 25 (Mo.App. W.D. Dec 23, 1997) (Stray voltage case. Followed *Otte* in Ohio, holding that electricity is a service, not a product.);

### New York

- *Farina v. Niagara Mohawk Power Corp.*, 438 N.Y.S.2d 645 (N.Y.A.D. 3 Dept. Apr 16, 1981) (Decedent was standing on roof of house, removing a radio transmitting antenna, when the antenna contacted overhead distribution power lines, electrocuting decedent. At 646-647: “Despite the limited expansion of the doctrine, we find no case in this or any other jurisdiction which has permitted a plaintiff to recover for injuries sustained from contact with an electrical line on the theory of strict products liability. The courts' resistance to the application of the doctrine is based upon a variety of reasons: electricity is not in a marketable state and the doctrine was not intended to apply in such cases; claimed defects in the cable carrying the electrical current are insufficient to establish liability because the cable is not “packaging” for the current, is not sold to the consumer, and remains owned by and under the control of the utility; until actually delivered, the electricity has not been placed in the “stream of commerce”; a defect in the manufacture of the electricity or in the manufacture or design of the wire itself, not merely its location, must be shown. [citations to four cases omitted]” At 647: “... we are unable to conclude that it was intended that electricity be included within the definition of ‘goods’ (Uniform Commercial Code, § 2-105).”);
- *Zoller v. Niagara Mohawk Power Corp.*, 525 N.Y.S.2d 364 (N.Y.A.D. 3 Dept. Feb 25, 1988) (Two cases in one appeal: Zoller “alleged that defendant negligently installed an electrical transformer at their residence”, while Stone pled a stray voltage case. At 367: “As

to the Stones' cause of action sounding in strict liability, we believe it was properly dismissed under the authority of *Farina v. Niagara Mohawk Power Corp.*, 81 A.D.2d 700, 438 N.Y.S.2d 645.”);

- *Bowen v. Niagara Mohawk Power Corp.*, 183 A.D.2d 293, 590 N.Y.S.2d 628, 631 (N.Y.A.D. 4 Dept. Nov 18, 1992) (Tree limb fell on overhead distribution lines, making contact between a 46 kV line and a 4.8 kV line, sending abnormally high voltage into plaintiff's residence, which abnormal voltage caused a fire. Court followed *Farina* and rejected *Ransome* (as well as rejecting *Smith* in Colorado and *Pierce* in California). “While we recognize the legitimate and important policy considerations that support the imposition of strict products liability against electric utilities for damages caused by abnormally high voltage, we decline to adopt the reasoning of the Wisconsin Supreme Court and instead conclude that the provision of electricity is a service, not the sale of a product. In doing so, we agree with the analysis of the Supreme Court of Ohio in *Otte v. Dayton Power & Light Co.*, 37 Ohio St.3d 33, 523 N.E.2d 835.”;
- *Higgins v. New York City Housing Authority*, 702 N.Y.S.2d 502, 506 (N.Y.City Civ.Ct. 6 Oct 1999) (ConEd accidentally connected 220 V rms to appliances designed to operate between 110 and 120 V rms. “In connecting 220 volts to 110 volt lines, the Court could find that Con Ed’s employee committed an act of gross negligence.” Judgment for plaintiffs.)

### Ohio

- *Rickert v. Dayton Power & Light Co.*, Not Reported in N.E.2d, 1984 WL 3270 at \*3 (Ohio App. 20 Dec 1984) (Boy in tree house was injured by electric current from utility wires of unspecified voltage. “The provision of electricity is a service, not a product.”);
- *Otte v. Dayton Power & Light Co.*, 523 N.E.2d 835 (Ohio May 25, 1988) (Stray voltage case. This opinion extensively discusses the issue of service/product.);

### Wyoming

- *Wyrulec Co. v. Schutt*, 866 P.2d 756, 760 (Wyo. 30 Dec 1993) (Roofer injured when he touched a 110 V line to the house. “We agree with this analysis of the nature of electricity and hold that electricity is a service and not a product. [Citing *Otte v. Dayton Power & Light Co.*, 523 N.E.2d 835, 838 (1988). Accord, *Bowen v. Niagara Mohawk Power Corp.*, 590 N.Y.S.2d 628, 631 (4 Dept. 1992).]”).

discussion of *Otte*

*Otte* is the leading case for why low-voltage electricity is not a product. The Ohio Supreme Court began its discussion of the service/product distinction:

A “product” is anything made by human industry or art. Electricity appears to fall outside this definition. This is so because electricity is the flow of electrically charged particles along a conductor. DP & L does not manufacture electrically charged particles, but rather, sets in motion the necessary elements that allow the flow of electricity. What we have here is a purported defect in the distribution system. Such a system is, in our view, a service. *Otte v. Dayton Power & Light Co.*, 523 N.E.2d 835, 838 (Ohio 1988).

The court gives no citation to authority for its definition of “product”. In the absence of an official definition, I would make the product/service distinction along the lines that a product has mass, while a service is delivery of ideas or opinions (although the ideas may be expressed on paper or other media having mass). For example, a drug is a product, but a physician’s prescription for a drug is a service. Beginning at page 36, below, I explain in detail why electrical energy is a product.

The purchase or sale of electricity is really the purchase or sale of *energy* in electrical form. An electrical generator transforms mechanical energy in a rotating shaft to electrical energy. The use of an electrical generator to produce electrical energy satisfies the *Otte* court’s definition of “anything made by human industry”.

The third sentence in the above quotation, about “flow of electrically charged particles”, is wrong. In alternating current with a frequency of 60 Hz, there is no net motion of the charged particles, because the flow reverses direction every 8.3 milliseconds. However, there is a flow of energy, which is measured by the utility’s kilowatt-hour meter at each customer’s premises.

The fourth sentence in the above quotation, about the utility not manufacturing electrically charged particles, is irrelevant. An automobile manufacturer does not manufacture the steel used in its cars, but that does not prevent its cars from being products.

The next sentence in the above quotation, about a defect in a distribution system, is conclusory. The Ohio Supreme Court continues:

Appellees and the court of appeals have attempted to equate the process of creating and delivering electricity to the manufacturing and sale of an ordinary consumer product. Such an enterprise is an intellectual disaster. This is true since neutral-to-earth voltage, the purported “product” in this case, has no benefit to the consumer, is clearly not the subject of a “sale” to a consumer, and is indisputably not “defective.” Neutral-to-earth voltage is neither marketed nor marketable. The [Cite as: 523 N.W.2d at 839] neutral-to-earth voltage in this case was approximately three volts while standard voltage is 120 to 140 volts. The stray voltage involved here is nothing more than the byproduct of the transmission of electrical power and did not escape until after it passed through the *Ottes*’ meter. As stated in *Kohli v. Pub. Util. Comm.* (1985), 18 Ohio St.3d 12, 13, 18 OBR 10, 479 N.E.2d 840, 841, “[stray voltage] is a



normal and natural condition which is common to every power distribution system in this country.”

*Otte v. Dayton Power & Light Co.*, 523 N.E.2d 835, 838-839 (Ohio 1988).

I do not want to get involved here in the details of stray voltage. If the quotation from *Kohli* were correct, then every dairy in the USA would have a stray voltage problem. In fact, only a few dairies have this problem, depending on each dairy’s electrical wiring, soil resistivity, etc.

Therefore, *Kohli* must be wrong. In the following paragraphs from *Otte*, I put my comments in footnotes at the bottom of the page.

Consumers, moreover, do not pay for individual electrically charged particles. Rather, they pay for each kilowatt hour provided. Thus, consumers are charged for the length of time electricity flows through their electrical systems. They are not paying for individual products but for the privilege of using DP & L’s service.<sup>25</sup>

It is also important to note that an electrical charge released by an electric company at a power plant is substantially different in several respects from the charge that ultimately enters one’s home. Section 402A(1)(b) of the Restatement requires that the product reach the consumer “without substantial change in the condition in which it is sold.” This condition precedent clearly has not come into play under the undisputed facts of the case at bar. As an appellate court noted in *Rickert v. Dayton Power & Light Co.* (Dec. 20, 1984), Darke App. No. 1105, unreported [available on WESTLAW, 1984 WL 3270], the electrical charge that flows through a power line may have a charge as high as 7,200 watts.<sup>26</sup> The electrical charge is reduced substantially<sup>27</sup> before it enters one’s home. It is apparent that electric power cannot be considered a product intended to reach the consumer in the same condition in which it is released at a power plant.<sup>28</sup> For this reason, and for the reasons stated above, we find electricity is a service, not a product, in the generally accepted sense of the word under the factual context of this case.

We must note that there are a scattering of cases that have determined electricity is a product for strict liability purposes.<sup>FN2</sup> Some have reached the curious [**Cite as: 523 N.W.2d at 840**] conclusion that electricity passing through a consumer’s meter becomes a product, but electricity not passing that point is a service.<sup>29</sup> Although this distinction is convenient for Section 402A analysis purposes, we find it unsupported by both logic and common sense. The jurisdictions finding electricity to be a product with no meter distinction fail to recognize that electricity is not manufactured and that it undergoes a substantial change in form before entering the home. We decline the invitation to follow such logic.

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<sup>25</sup> On the contrary, the utility’s customers are paying for kilowatt-hours of electrical energy. Look at the utility meter and the monthly invoice! The better view is that energy is a product.

<sup>26</sup> The charge does not “flow”, there is no net motion, owing to the sinusoidal voltage. Charge is measured in units of coulombs, *not* watts. Watts are units of power. Whoever wrote this sentence is ignorant of high school physics.

<sup>27</sup> The charge on an electron is constant. The court should have said “voltage”, *not* “charge”.

<sup>28</sup> This sentence is conclusory.

<sup>29</sup> I too am bothered by this illogical conclusion by many courts. Beginning at page 40 below, I show how to fix the problem.

FN2. The states of California, Colorado, Connecticut, Michigan, New Jersey, New York, and Wisconsin have drawn a distinction between electricity still in the distribution lines and electricity that has been sold as a product through the meter to the customer: *Pierce v. Pacific Gas & Elec. Co.* (1985), 166 Cal.App.3d 68, 212 Cal.Rptr. 283; *Smith v. Home Light & Power Co.* (Colo. 1987), 734 P.2d 1051; *Carbone v. Connecticut Light & Power Co.* (1984), 40 Conn.Sup. 120, 482 A.2d 722; *Williams v. Detroit Edison Co.* (1975), 63 Mich.App. 559, 234 N.W.2d 702; *Aversa v. Public Serv. Elec. & Gas Co.* (1982), 186 N.J.Super. 130, 451 A.2d 976; *Farina v. Niagara Mohawk Power Corp.* (1981), 81 App.Div.2d 700, 438 N.Y.Supp.2d 645; *Ransome v. Wisconsin Elec. Power Co.* (1979), 87 Wis.2d 605, 275 N.W.2d 641. Of these states, Colorado, Michigan, and New York rejected the application of strict liability in tort because the electricity had not yet flowed through the meter. The states of California, Connecticut, New Jersey, and Wisconsin have applied strict liability in tort at a point near to or where electricity had flowed through the meter. Texas is the only state to hold a public utility strictly liable without making a distinction as to whether the electricity has passed through the meter.<sup>30</sup> *Houston Lighting & Power Co. v. Reynolds* (Tex.App. 1986), 712 S.W.2d 761. See, also, *Public Service Indiana, Inc. v. Nichols* (Ind.App. 1986), 494 N.E.2d 349; *Schriner v. Pennsylvania Power & Light Co.* (1985), 348 Pa.Super. 177, 501 A.2d 1128. Both *Schriner* and *Nichols* are stray-voltage cases. Both *Schriner* and *Nichols* hold that a public utility can be strictly liable in tort under Section 402A of the Restatement of the Law 2d, Torts. These cases, however, do not address the issues in this case. In *Schriner*, the trial court denied the preliminary objections of the public utility to being subject to strict liability in tort. An interlocutory appeal was taken. The appellate court, although not the Pennsylvania Supreme Court, affirmed the trial court. There are, therefore, no facts in the record in *Schriner* with which to compare that case with this case. As an abstract matter, the court held that a public utility could be strictly liable in tort. There was no thorough discussion of the public policy ramifications of this holding. The court only briefly referred to public policy at the end of the opinion and never discussed the heavily regulated nature of a public utility.

*Nichols* also does not provide useful precedent. It held, like *Schriner*, that a public utility is subject to strict liability in tort. Nowhere in the opinion did the court of appeals discuss the public policy ramifications of this holding in connection with a heavily regulated public utility. Even though *Nichols* involved a jury verdict in favor of the dairy farmer, it is factually distinguishable from this case.

In *Nichols*, the public utility was aware that Nichols intended to use electricity in his dairy operation and had indeed visited the Nichols farm to discuss his electrical needs with him while he was building his dairy barn. Within a year after he began milking cows, Nichols became aware of neutral-to-earth voltage coming from the public utility's primary neutral line. There is nothing in the decision about the levels of neutral-to-earth voltage or whether there were any defects in or anything wrong with the transmission and distribution lines of the public utility. The case simply does not offer the same facts as are present in this case.

For a more detailed analysis of the problems such as those encountered in *Nichols* and *Schriner*, see Comment, Shocks, Shorts and Sparks — Strict Liability for Electric Utilities? (1987), 20 Loyola L.A.L.Rev. 973; Comment, Torts of Electric Utilities: Can

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<sup>30</sup> After *Otte* was decided, the Texas Supreme Court reversed the intermediate appellate court on this point of law.

Strict Liability be Plugged In? (1978), 11 Loyola L.A.L.Rev. 775; Prosser, The Fall of the Citadel (1966), 50 Minn.L.Rev. 791.

Even if we applied the reasoning of the decisions that have adopted strict liability for public utilities, it must be stressed that a power company owes no duty to inspect or repair its customer's distribution system. *Naki v. Hawaiian Elec. Co.* (1968), 50 Hawaii 416, 442 P.2d 55. The record before us indicates the stray voltage backed up<sup>31</sup> onto the Ottes' wires. The fact that the Ottes' wires offered a low resistance path for the unused voltage to escape is hardly negligence on the part of DP & L. The only possible tort we can posit sounds in negligence on the theory that there was a failure to warn. As stated above, the jury rendered a verdict favorable to the Ottes on that charge.

*Otte v. Dayton Power & Light Co.*, 523 N.E.2d 835, 839-840 (Ohio 1988).

There is a series of glaring errors in elementary physics, including wrong units, in *Otte*. After the bad physics is peeled away, what remains is mostly conclusory statements.

### **Why Electricity Is a Product.**

Judges, aided by briefs from lawyers, display an abysmal understanding of electricity, probably because they went through college avoiding difficult classes in physics. Their ignorance of electricity shows in their reasons to consider electricity a service.

In a case in California, the attorneys for Pacific Gas & Electric submitted the following paragraph in their brief to a trial court:

What is electricity? Simply stated, it is a *force*, like the wind, with the *potential* to do work. Electricity alone cannot perform work. Electricity alone is useless from a consumer's point of view. Electricity is a stream of electrons that is created, transmitted, distributed, and converted to energy, all within milliseconds. *No California court has ever held that electricity is a product.*" (Emphasis in original.)

*Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283, 288, n. 3 (Cal.App. 3 Dist. 1985).

This is total rubbish. Electricity is *not* a force. Electricity is *not* "a stream of electrons that is created, ... and converted to energy, ...." An electric utility does *not* create electrons — the utility increases the potential energy of naturally existing valence electrons<sup>32</sup> in wire and produces an electric current. The electrons are *not* converted to energy — the energy released from electricity comes from a change in the potential energy of the electrons, the electrons still exist after they release their energy.

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<sup>31</sup> The court writes as if sewage was backing up in a pipe, which is *not* what happens in stray voltage.

<sup>32</sup> In general, *any* charged particle(s), not just electrons, is necessary for electricity. However, in the specific case of metallic conductors, the electric current consists of moving valence electrons. In the special case of alternating current in the USA, the electrons reverse direction 60 times each second, so there is no net motion of electrons, when averaged over an integer number of cycles.

In the landmark case of *Ransome*, the Wisconsin Supreme Court refused to give a definition for electricity, but nonetheless reached the correct result.

While there probably are numerous technical definitions of “electricity,” we need not be concerned with those accurate descriptions here suffice it to say it is a form of energy that can be made or produced by men, confined, controlled, transmitted and distributed to be used as an energy source for heat, power and light and is distributed in the stream of commerce.

The distribution might well be a service, but the electricity itself, in the contemplation of the ordinary user, is a consumable product.

*Ransome v. Wisconsin Elec. Power Co.*, 275 N.W.2d 641, 643 (Wis. 1979).

The first sentence of this quoted paragraph seems to be an admission that the Wisconsin Supreme Court was *unable* to define electricity. But they reached the correct result, because they focused on *energy* as the product that the electric utility delivers to its customers.

In *Pierce*, a California appellate court offered an analogy that may help us understand the issue:

PG & E’s other principal product provides an apt analogy: if by some fluke a PG & E gas line delivered not methane gas but highly explosive hydrogen gas to a customer’s range or dryer, with predictable results, we would have little trouble concluding that gas is a “product” for tort liability purposes.

*Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283, 290, n. 7 (Cal.App. 3 Dist. 1985).

The court seems to believe that it is obvious that methane gas is also a product. Moreover, delivery of hydrogen instead of methane surely involves a negligent act, so products liability is not necessary. Therefore, this sentence in *Pierce* proves nothing, because of the court’s lack of citations to cases holding that gas is a product. In fact, there are court cases involving products liability claims for methane or propane gas,<sup>33</sup> so the analogy is valid.

#### why energy is a product

Let us consider the matter of whether electricity is a product (or a “good” under the Uniform Commercial Code) from the beginning, in the context of customary electrical supply for residences and small businesses in the USA. The utility supplies electric current at a higher potential energy (i.e., 120 V with respect to the neutral wire) and the user returns that electric current at nearly zero potential energy on the neutral wire that goes to the utility’s distribution transformer. So the utility is really supplying *energy*, not electrons. Another way to get to the same result is that the utility’s

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<sup>33</sup> See, e.g., *Gardiner v. Philadelphia Gas Works*, 197 A.2d 612 (Pa. Jan 21, 1964) (Natural gas is a “good” under the Uniform Commercial Code.); *University of Pittsburgh v. Equitable Gas Co.*, 5 Pa. D. & C.3d 303, 1978 WL 23457, 24 UCC Rep.Serv. 1131 (Pa.Com.Pl. 1978); *Blueflame Gas, Inc. v. Van Hoose*, 679 P.2d 579 (Colo. 1984); *Stanton v. National Fuel Gas Co.*, 1987 WL 61939, 4 UCC Rep.Serv.2d 378, 1 Pa. D. & C.4th 223 (Pa.Com.Pl. 1987); *Menschik v. Mid-America Pipeline*, 812 SW.2d 861 (Mo.App. W.D. 1991). It appears that gas companies rarely challenge plaintiff’s allegation that gas is a product.

meter measures consumption in kilowatt-hours (kW·h), which is a measure of energy.<sup>34</sup> Einstein's famous relation,

$$E = m \cdot c^2$$

says that energy and mass are equivalent, because they are related with an equals sign.<sup>35</sup> Because it is obvious that selling a movable<sup>36</sup> material object, which has mass, is a product or good, it logically follows that selling electric energy is also a product or good.

For those who have an uncomfortable feeling with the analysis and conclusion in the previous paragraph, consider an analogy to a bottle of water on the shelf in a grocery store. The “manufacturer” of the bottled water did not create the water, it simply took the water from a river, spring, or underground well, filtered out some impurities, and put it in bottles to sell. Similarly, a municipal waterworks takes naturally occurring water, filters out some impurities, adds chlorine to kill bacteria, then pumps the water through underground pipes to consumers. Both bottled water and water in pipes have been held by courts to be a good, under the Uniform Commercial Code, and a product. See cases cited in the contamination section of my companion essay at <http://www.rbs2.com/utility2.pdf> . The leading case is *Gall v. Allegheny County Health Dept.*, 555 A.2d 786, 789 (Pa. 1989) (water is a “good”). The fact that a lawyer can *argue* that bottled water is a service (or that 120 V electricity is a service) does *not* make these things a service.

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<sup>34</sup> One kilowatt-hour is equivalent to 3600 kilojoules. Joules are a metric unit of energy used by physicists.

<sup>35</sup> In this relationship, E is the energy in joules, m is the mass in kilograms, and c is the speed of light in vacuo, approximately  $3 \cdot 10^8$  meters/second.

<sup>36</sup> The Uniform Commercial Code, § 2-105 emphasizes that a good is “movable”. From the viewpoint of physics, goods also have mass — unlike services, which often involve ideas or other intangibles. Note that a quantity of goods is commonly expressed in units of mass. Alternatively, a quantity of goods can be expressed as a volume, which can be converted to mass if the density is known.

## No Rigid Demarcation Point Between Service/Product

In 1982, a trial court in New Jersey said that the watt-hour meter is not always the demarcation point between service and product:

Although the [*Ransome*] court found that the sale of electricity takes place at the meter where charges are generally computed, social policy was noted to justify the imposition of strict liability when the product is merely placed into the stream of commerce. It is the opinion of this court that, while a sale is sufficient to place a product into the stream of commerce, a sale is not an absolute prerequisite to a finding that a product has been placed in the stream of commerce. Electricity may enter the stream of commerce when the electric company relinquishes exclusive control over its product. See *Petroski v. Northern Indiana Pub. Service Co.*, 171 Ind.App. 14, 354 N.E.2d 736, 747 (1976).

....

It is the holding of this court that the principles of strict liability in tort, as well as the implied warranties of merchantability and fitness for particular use, are applicable in cases where injuries are sustained from electricity placed in the stream of commerce. While a sale is conclusive as to the placement of the product in the stream of commerce, evidence that an electric company relinquished exclusive control over its product may establish strict liability at a point prior to its running through a meter where charges are computed.

*Aversa v. Public Service Elec. and Gas Co.*, 451 A.2d 976, 980 (N.J.Super.L. 1982).

In March 1985, *Pierce* in California rejected a rigid rule that makes the watt-hour meter the demarcation between service and product.

We emphasize that our holding is limited to cases where the electricity is actually in the "stream of commerce," and expected to be at marketable voltage. In most cases this will mean the electricity must be delivered to the customer's premises, to the point where it is metered, although the many variations in electrical systems prevent our drawing a "bright line" at a particular point. [FN9]

FN9. Evidence presented at trial suggested that at least one of the two electric meters on plaintiffs' premises was removed by the PG & E crew, yet electricity was still able to pass through the meter's socket and into plaintiffs' residence. In many larger electric systems removal of the meter does not interrupt the flow of electricity. We do not suggest that unplugging the meter is sufficient to withdraw the electricity from the "stream of commerce," thereby exempting the utility from strict liability in tort.

*Pierce v. Pacific Gas & Electric Co.*, 212 Cal.Rptr. 283, 292 (Cal.App. 3 Dist. 1985).

For more recent cases in California, see *Stein v. Southern Cal. Edison Co.*, 8 Cal.Rptr.2d 907, 909-910 (Cal.App. 2 Dist. 1992) (following *Pierce*).

Despite note 9 in *Pierce*, in residences and small-businesses, removal of the watt-hour meter *does* prevent electricity from entering the user's circuit breakers and receptacles. And, if the watt-hour meter is on the outside of the building where the meter can be easily read by utility personnel, then removing the meter prevents electricity from entering the user's building. This makes the watt-hour meter a convenient and logical demarcation point for the division between

(1) the electric utility's wires and equipment upstream from the meter and (2) the downstream customer's wires where electricity is subject to products liability. However, I agree with *Aversa* and *Pierce* that there may be some cases in which products liability may apply to the low-voltage electricity between the distribution transformer and the watt-hour meter.

In December 1985, a Pennsylvania appellate court wrote:

With a product such as electricity, a literal "sale" of the product may not be required; however, courts willing to call electricity a product have been consistent in holding that the electricity must have been placed into the stream of commerce before § 402A strict liability can attach. See *Pierce v. Pacific Gas & Electric Company*, *supra*; *Cratsley v. Commonwealth Edison Company*, 38 Ill.App.3d 55, 347 N.E.2d 496 (1976); *Hedges v. Public Service Company of Indiana, Inc.*, *supra*; *Petroski v. Northern Indiana Public Service Company*, *supra*; *Williams v. Detroit Edison Company*, 63 Mich.App. 559, 234 N.W.2d 702 (1975); *Aversa v. Public Service Electric and Gas Co.*, 186 N.J.Super. 130, 451 A.2d 976 (1982).

Entry of electricity into the stream of commerce has been deemed to occur, generally, when the electricity leaves the transmission lines and passes through the customer's meter. See, e.g., *Williams v. Detroit Edison Company*, *supra*. In *Pierce v. Pacific Gas & Electric Company*, 166 Cal.App.3d 68, 212 Cal.Rptr. 283 (1985), the California Court of Appeal stated:

We emphasize that our holding is limited to cases where the electricity is actually in the "stream of commerce," and expected to be at marketable voltage. *In most cases this will mean the electricity must be delivered to the customer's premises, to the point where it is metered*, although the many variations in electrical systems prevent our drawing a "bright line" at a particular point.

*Id.* at 84, 212 Cal.Rptr. at 292 (footnote omitted) (emphasis added). Similarly, in *Aversa v. Public Service Electric and Gas Co.*, 186 N.J.Super. 130, 451 A.2d 976 (1982), the New Jersey Superior Court emphasized:

Where, however, the electricity is no longer in transmission in the public right of way, but has been introduced into the stream of commerce by a sale thereof or otherwise, the liability of the electric company is no longer dependent upon a showing of negligence but may be based upon a product liability cause of action unrelated to fault.

*Id.* at 135, 451 A.2d at 979 (emphasis in original) (citations omitted). The *Aversa* court explained the reasoning behind the holdings above-described:

The cases in which liability for electricity is restricted to the traditional principles of negligence ... confront only the situation where the electricity is being transmitted over high tension wires for ultimate availability to the consuming public. The transmission of electricity, as well as the transmission of other similar type consumable goods, is a service being rendered by the utility to prospective purchasers. While being transmitted, liability is controlled by standards of negligence and not strict liability, since any injury sustained as a result thereof is causally connected only to the transmission or transportation service and is unrelated to the ultimate sale of the product.

*Id.* at 135, 451 A.2d at 979.

In other words, while still in the distribution system, electricity is a service, not a product; electricity only becomes a product, for purposes of strict liability, once it passes through the customer's meter and into the stream of commerce. See *Smith v. Home Light and Power Company*, *supra*.

*Schriner v. Pennsylvania Power & Light Co.*, 501 A.2d 1128, 1133-1134 (Pa.Super. 1985).

In 1996, the Georgia Supreme Court said:

Savannah Electric urges this Court to follow the direction taken by the many foreign courts that have adopted the bright line rule that electricity is "sold" when it has passed through the electric meter for purposes of determining the amount of electricity sold to the consumer. See, e.g., *Bryant*, supra, 844 F.Supp. at 352(C); *Ransome*, supra, 275 N.W.2d at 649; *Schriner v. Penn. Power, etc., Co.*, 348 Pa.Super. 177, 501 A.2d 1128, 1133 (1985). Clearly, a determination whether or not electricity had passed through a meter will control the "sale" issue in the vast majority of cases. However, our review of cases from other jurisdictions has revealed cases addressing unusual factual scenarios in which the foreign court reached the conclusion (in which we agree) that although the electricity had not come through the meter at the time the injury to the consumer occurred, there were facts from which a factfinder could hold the manufacturer strictly liable. See, e.g., *Stein v. Southern Cal. Edison Co.*, 7 Cal.App.4th 565, 8 Cal.Rptr.2d 907 (1992) (high voltage entered meter causing it to explode but never passed through meter) [footnote omitted]; *Aversa v. Public Service Electric, etc., Co.*, 186 N.J.Super. 130, 451 A.2d 976, 980 (N.J.Super.L. 1982) (employee injured by current conveyed inside company "switchhouse" prior to passing through meter). In *Stein*, supra, the California court

decline[d] to delineate the particular point at which it can be said that electricity enters the stream of commerce for all purposes. "[T]he many variations in electrical systems prevent our drawing a 'bright line' at a particular point." (*Pierce v. Pacific Gas & Electric Co.*, supra, 166 Cal.App.3d 68, 84, 212 Cal.Rptr. 283.)

[*Stein v. Southern Cal. Edison Co.*,] 7 Cal.App.4th at 571, 8 Cal.Rptr.2d 907 [910].

Given that this Court rejected a rigid definition of when a product is "sold" under OCGA 51-1-11(b)(1) in *Thorpe*, supra, and instead recognized the need for a more flexible, case-by-case factual analysis for the determination of this issue, we conclude that it would be inconsistent with Georgia law to adopt a rigid bright line rule exclusively in regard to the sale of electrical current. Thus, we agree with the New Jersey court in *Aversa*, supra, 451 A.2d at 980, that "a sale is not an absolute prerequisite to a finding that a product has been placed in the stream of commerce."

*Monroe v. Savannah Elec. and Power Co.*, 471 S.E.2d 854, 856 (Ga. 1996).

### **My View**

#### service/product distinction

I agree that modern courts are correct to hold that low-voltage electricity is a product, *not* a service. However, in my opinion, modern courts are wrong to hold that high-voltage electricity in a utility distribution system is a service. In my opinion, electricity (i.e., electric energy) is a product in both the high-voltage system (i.e., generation, transmission, distribution) and low-voltage systems. The better reason that products liability (i.e., strict liability) does *not* apply to high-voltage electricity is that either (1) the high-voltage electricity was not defective or (2) perhaps the high-voltage electricity had not yet entered the stream of commerce to end users. In my view, the service/product distinction confuses the legal issue: electrical energy ought to always be a product.



### demarcation point

In cases where the injury or damage was caused by electricity that had passed through the watt-hour meter, the meter makes a convenient demarcation point for where electricity is placed in the stream of commerce to the end user and product liability begins to apply. In between the distribution transformer and the watt-hour meter, the low-voltage electricity is in a legal murky area that can be decided only on the facts of each case.

In an idealized view (i.e., ignoring losses due to heat in transformers and in resistance of wires), the electrical energy flows continuously from generators to customers. It is a bit jarring to see judges declare high-voltage electricity is a service, while low-voltage electricity is a product — despite the fact that the electrical energy flows continuously. In this judicial view, the electrical energy was somehow transmogrified at some place where the “service” mysteriously became a product. The law can be better understood when one realizes that the final distribution transformer and the watt-hour meter have a *legal* function, in addition to their electrical engineering function. The final distribution transformer is where the high-voltage electricity is transformed to low-voltage electricity (i.e., the electricity is put into a form intended for delivery to a customer). The watt-hour meter is typically the point-of-sale where ownership of the electrical energy is transferred from the utility to the customer.

### possibility of products liability between two utilities

Looking from a different analogy, high-voltage electricity is like a pallet load of products, each product in a box, that is being transferred from a boat to a truck, as part of the transport from manufacturer to end user. In this analogy, the products are in wholesale commerce, but the products are not yet being used as intended by the manufacturer.

Similarly, many electric utilities do not generate *all* of the electrical energy that they deliver to their customers, instead utilities buy and sell high-voltage electricity on a wholesale market. High-voltage electricity can be analogized to a pallet load of products — both are products, but products liability does not apply until the products are delivered to the consumer and put into use.

It is an interesting question whether a utility that purchases high-voltage electricity from another utility could sue for alleged defects in the high-voltage electricity. It is likely that such problems would be mentioned in a sales contract between the utilities, as risk allocation, so the problem of defective high-voltage electricity might be litigated as a breach of warranty or breach of contract.

I have some similar remarks in the last paragraph of the section on electrocution (page 9, above), in which I argue that courts dismissed products liability claims for electrocution by high-voltage electricity for the wrong reason.

## Conclusion

Suing an electrical utility for liability is not an easy case for plaintiff's attorney. There are complicated issues in electrical engineering that are unfamiliar to nearly all attorneys, judges, and juries, making it essential to have an expert witness who is an electrical engineer. There is a complicated regulatory environment that may affect litigation, by including limitations on liability in tariffs, etc. Before 1979, the law in most states required plaintiff's attorney to prove negligence by an electric utility. As a result of the Wisconsin Supreme Court decision in *Ransome*, other states began to hold that low-voltage electricity was a product, to which products liability applies. See the list of cases, on pages 11-19.

On pages 28-31, I list the modern (i.e., since Jan 1979) cases that continue the old legal rule that low-voltage electricity is a service, *not* a product.

I agree that modern courts are correct to hold that low-voltage electricity is a product, *not* a service. See discussion beginning on page 36.

Upstream from the final distribution transformer, I argue on pages 40-41 of this essay that high-voltage electricity is a product, and products liability *might* apply if the allegedly defective high-voltage electricity was sold from one utility to another utility, and the purchasing utility sued in tort.

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