IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA

Kevin Brnich Electric LLC, Bolt Electric LLC, Electricalifornia, Zank Electric, Charles Vodicka, Patrick Cates, Bryan Butakis, Rick Keyser, Tyler Barrette, Clifford Oakley, and Jason Wylie, *individually and on behalf of all others similarly situated*, Plaintiff v. Siemens Industry, Inc. Defendant.	Case No. 1:22-cv-01229-MHC **SECOND AMENDED CONSOLIDATED CLASS ACTION COMPLAINT** JURY TRIAL DEMANDED

Plaintiffs Kevin Brnich Electric LLC, Bolt Electric LLC, Electricalifornia, Zank Electric, LLC, Charles Vodicka, Patrick Cates, Bryan Butakis, Rick Keyser, Tyler Barrette, Clifford Oakley, and Jason Wylie (collectively, "Plaintiffs"), by their undersigned counsel, file this Class Action Complaint on behalf of themselves and a class of all similarly situated electrician and homebuilder businesses and individual consumers against Siemens Industry, Inc. ("Siemens" or "Defendant"). Plaintiffs base the following allegations upon personal information and belief, and the investigation of counsel:

INTRODUCTION

1. Arc Fault Circuit Interrupters ("AFCI") are a type of circuit breaker with electronic components designed to protect homes and businesses from an electrical arc fault—a potential dangerous electrical condition where the electrical current travels through an unintended medium, usually the air, instead of through the circuit as intended. Unintended and dangerous electrical arcs pose a serious risk of an electrical fire and of injury.

2. AFCI breakers are complex devices. Manufacturers must design and use sophisticated circuitry to identify dangerous electrical arcing and trip the breaker in response. Using advanced circuitry, AFCI breakers monitor aspects of the circuit and current in that circuit to identify potential signatures of electrical arcs. When the AFCI breaker identifies a dangerous electrical arc, the breaker trips to stop the current and prevent the electrical arc from causing a fire or other harm.

3. AFCI manufactures, however, have an additional hurdle—harmless electrical arcing frequently occurs in homes. For instance, many common household appliances create arcing signatures either during their normal operation or when the appliance is turned on or stopped. Despite the presence of electrical arcing signatures, those arcs are harmless and do not pose a threat of a fire or other injury. As such, AFCI breakers should not trip in their presence.

4. Properly designed and functioning AFCI breakers, therefore, must be capable of distinguishing harmless, expected arcs in a circuit, when the breaker should not trip, from dangerous arcs in the circuit, when the breaker should trip. AFCI breakers that fail to distinguish between dangerous and harmless arcs and trip in the presence of both, exhibit "nuisances tripping", or frequent and unnecessary tripping that renders the AFCI breaker unusable. AFCIs experiencing nuisance tripping must be replaced because the nuisance tripping renders the circuit unusable and prevents users or electricians from determining whether a breaker tripped due to a defect in the breaker or because of a dangerous arc.

5. Siemens is one of several companies that has designed and manufactured AFCI breakers. It offers standalone AFCI breakers and combo breakers that perform multiple functions. Siemens' AFCIs, however, fail to adequately distinguish between harmless and dangerous electrical arcs. As a result, Siemens' defective AFCI breakers suffer from nuisance tripping, where the breakers frequently and unnecessarily trip even where no dangerous electrical arc is present and there is no risk of electrical harm. Specifically, Siemens has failed to update its AFCIs to identify and ignore harmless arcing signatures caused by common appliances, especially as new appliances have been developed and electrical codes have expanded the locations where homeowners are required to use AFCIs. Rather, Siemens AFCIs trip in the presence of common appliances, even though they do not

pose a risk due to electrical arcing, leading to excessive and frequent nuisance tripping.

6. Siemens recognizes that nuisance tripping imposes significant costs on homeowners and electricians. In advertising its electrical services, Siemens recognizes that "[t]he costs of downtime are great, in terms of both lost productivity and equipment replacement, as are the costs of operating inefficient or unsafe systems."

7. Consumers of Siemens' AFCI breakers and electricians have suffered those types of damages. Siemens' defective AFCI breakers are effectively unusable and need to be replaced because their frequent nuisance tripping prevents circuits controlled by the breaker from operating at all, meaning appliances and outlets within the circuit are frequently receiving no current. Consumers and electricians have purchased defective Siemens' AFCI breakers that needed to be replaced, losing the purchase value of the breakers.

8. Additionally, electricians who purchased and used defective Siemens' AFCI breakers—often, electricians must use Siemens' breakers when their customer uses a Siemens electrical panel to house their home's circuit breakers—lost the value of the breaker, had to purchase additional Siemens or another manufacturer's AFCI breakers, and spent uncompensated time investigating the cause of nuisance tripping only to find the cause was the defective Siemens' AFCI breaker.

9. Plaintiffs have similarly suffered damages. Kevin Brnich Electric, LLC ("KB Electric"), Bolt Electric LLC ("Bolt Electric"), Electricalifornia, and Zank Electric LLC ("Zank Electric"), (collectively, "Commercial Plaintiffs") are individuals or entities that provide electrical-related or homebuilding services to their customers. As part of their services, they install or have installed AFCI breakers in their customers' homes and businesses. The Commercial Plaintiffs have suffered substantial harm from Siemens' defective AFCI breakers. Specifically, these Plaintiffs have installed Siemens' AFCI breakers that experienced nuisance tripping and needed to be replaced or paid for someone to do so. Moreover, each Plaintiff has expended uncompensated time and effort seeking to identify the cause of the nuisance tripping, finding later that the issue was Siemens' defective AFCI itself. Had Siemens disclosed that its AFCIs suffered from frequent and unnecessary nuisance tripping, these Plaintiffs would not have purchased Siemens' AFCIs or installed them in their customers' homes or would not have had to exhaust time and effort searching for the cause of the nuisance tripping occurring due to Siemens' defective AFCIs.

10. Plaintiffs Vodicka, Cates, Butakis, Keyser, Barrette, Oakley, and Wylie (collectively, "Consumer Plaintiffs") are consumers who either paid an electrician to install a Siemens' panel box and AFCI breakers in their homes or purchased a home with Siemens AFCIs already installed. Each of Consumer

Plaintiffs' Siemens AFCIs experienced frequent and unexplained nuisance tripping, causing Plaintiffs to lose money paying companies to investigate and determine the cause of the nuisance tripping and replace the malfunctioning AFCIs. Despite the frequent nuisance tripping, none of the Plaintiffs (either individually or through hired professionals) found evidence of any dangerous arcing at their homes. Rather, the nuisance tripping was caused by Siemens' defective AFCIs. Had Siemens disclosed that its AFCIs experience frequent and unnecessary nuisance tripping, the Consumer Plaintiffs would not have paid to install Siemens' breakers in their home and would not have suffered damages associated with attempting to identify and resolve the nuisance tripping.

11. Due to the damages each Plaintiff suffered due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions with respect to those AFCIs, Plaintiffs bring this action against Siemens on behalf of a proposed nationwide Consumer Class and Commercial Class for their fraudulent omissions claim, and, for all other claims, on behalf of the State Subclasses of consumers in California, Maine, , Nebraska, New Hampshire, North Carolina, Oregon, Pennsylvania, Texas, and Wisconsin.

JURISDICTION AND VENUE

12. This Court has subject matter jurisdiction over this case pursuant to 28 U.S.C. § 1332(d), the Class Action Fairness Act, which affords federal courts with

original jurisdiction over cases where any member of the plaintiff class is a citizen of a state different from any defendant, and where the amount in controversy exceeds $5,000,000, exclusive of interest and costs. Here, each Plaintiff is diverse from Defendants because Plaintiffs reside in California, Maine, Nebraska, New Hampshire, North Carolina, Oregon, Pennsylvania, Texas, and Wisconsin and Siemens Industry, Inc. resides in Alpharetta, Georgia, where it is headquartered and Delaware, where it is incorporated. Plaintiffs allege that, in the aggregate, the claims of all Class members exceed $5,000,000, exclusive of interest and costs.

13. This Court has personal jurisdiction over Siemens Industry Inc. because Siemens operates its principal place of business in this District and, additionally, because a substantial part of the events and conduct giving rise to the Plaintiffs' claims occurred in this State, specifically, Siemens development, manufacturing, advertising, and sale of its AFCI breakers.

14. Venue is proper in this District because Siemens Industry Inc. is located and operates its principal place of business here, because Siemens conducts substantial business in this District and has intestinally availed itself of the laws and markets of this District, and because a substantial part of the events and conduct giving rise to the Plaintiffs' claims occurred in this District.

PARTIES

15. **Plaintiff** Kevin Brnich Electric, LLC is a limited liability company owned by Kevin Brnich and located in Pennsylvania. It provides electrical services to its customers. As part of its services, it installs AFCIs and performs troubleshooting for AFCIs experiencing nuisance tripping. It has installed Siemens' AFCIs that experienced unexplained nuisance tripping that required time and money to investigate and needed to be replaced. Consequently, it suffered damages due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions concerning its AFCIs and their ability to perform the essential functions of an AFCI breaker.

16. **Plaintiff** Bolt Electric LLC is a limited liability company owned by Jeff Meade and located in Maine. It provides electrical services to its customers. As part of its services, it installs AFCIs and performs troubleshooting for AFCIs experiencing nuisance tripping. It has installed Siemens' AFCIs that experienced unexplained nuisance tripping that required time and money to investigate and needed to be replaced. Consequently, it suffered damages due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions concerning its AFCIs and their ability to perform the essential functions of an AFCI breaker.

17. **Plaintiff** Electricalifornia is an electrical company and sole proprietorship owned by Drew Montoya and located in La Mesa, California.

Electricalifornia provides electrical services to its customers, including, among other things, performing residential and commercial circuitry work, installing and replacing circuit breakers, and investigating and resolving the cause of tripped circuit breakers. Electricalifornia incurred costs purchasing Siemens AFCI breakers that failed to function properly and suffered from nuisance tripping, spent time investigating the potential causes of the tripping, and ultimately had to replace misfunctioning AFCI breakers.

18. **Plaintiff** Zank Electric LLC is a Wisconsin company that provides electrical services to customers. Zank Electric LLC provides electrical services to its customers, including, among other things, performing residential and commercial circuitry work, installing and replacing circuit breakers, and investigating and resolving the cause of tripped circuit breakers. Zank Electric LLC incurred costs purchasing Siemens AFCI breakers that failed to function properly and suffered from nuisance tripping, spent time investigating the potential causes of the tripping, and ultimately had to replace misfunctioning AFCI breakers.

19. **Plaintiff** Charles Vodicka is a consumer residing in North Carolina who paid to have a Siemens panel box and breakers, including Siemens' AFCIs, installed in his home. The Siemens' AFCIs in his home experienced nuisance tripping, causing Vodicka to pay professionals to investigate and attempt to resolve the nuisance tripping, which were ultimately determined to be caused by Siemens'

defective AFCI breakers. Consequently, Mr. Vodicka suffered damages due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions concerning its AFCIs and their ability to perform the essential functions of an AFCI breaker.

20. **Plaintiff** Patrick Cates is a consumer residing in California who paid to have Siemens breakers, including Siemens' AFCIs, installed in his new-construction home. The Siemens' AFCIs installed in his home experienced nuisance tripping, causing Cates to expend time effort, and repair and replacement costs related to Siemens' defective AFCI breakers. Consequently, Cates suffered damages due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions concerning its AFCIs and their ability to perform the essential functions of an AFCI breaker.

21. **Plaintiff** Bryan Butakis is a consumer residing in Pennsylvania who paid to have Siemens breakers, including Siemens' AFCIs, installed in his new-construction home. The Siemens' AFCIs installed in his home experienced nuisance tripping, causing Butakis to expend time effort, and repair and replacement costs related to Siemens' defective AFCI breakers. Consequently, Butakis suffered damages due to Siemens' defective AFCIs and Siemens' misrepresentations and omissions concerning its AFCIs and their ability to perform the essential functions of an AFCI breaker.

22. **Plaintiff** Rick Keyser is a Nebraska resident who has purchased and installed Siemens' AFCI breakers in his home that inappropriately tripped when no dangerous electrical arcing occurred. Keyser replaced the defective Siemens' AFCI breakers.

23. **Plaintiff** Tyler Barrette is a New Hampshire resident who, in addition to other costs, paid to replace Siemens' AFCI breakers in his home, which inappropriately tripped when no dangerous electrical arcing was present.

24. **Plaintiff** Clifford Oakley is an Oregon resident who, in addition to other costs, paid to replace Siemens' AFCI breakers in his home, which inappropriately tripped when no dangerous electrical arcing was present.

25. **Plaintiff** Jason Wylie is a consumer who resides in Texas. Wylie built a home in 2022 that used Siemens' AFCIs installed in a Siemens-brand panel box. His Siemens' AFCIs repeatedly trip for no identifiable reason and even when no dangerous arcing is occurring.

26. **Defendant** Siemens Industry Inc. is listed as being headquartered at 100 Technology Dr., Alpharetta, GA, 30005 and manufactures, sells, and provides a warranty for Siemens AFCI breakers to United States customers.

FACTUAL BACKGROUND

27. Siemens Industry, Inc. is a subsidiary of Siemens AG, a multinational conglomerate company that operates in 190 countries, and maintains approximately

285 production and manufacturing facilities globally, including the United States. Its USA operations include manufacturing plants and subsidiaries located throughout the country. Siemens AG purports to have invested approximately $40 billion in the U.S., including more than $1 billion a year in research and development and over $50 million annual to train its existing workforce in the U.S.[1]

28. Each year, Siemens AG earns in tens of billions of dollars of worldwide revenue. Over the past decade, Siemens AG has averaged nearly $90 billion annually in gross revenue. It nets tens of billions of dollars in revenue from sales in the U.S. alone, which it describes as its largest market. In fiscal year 2019, for instance, Siemens AG reported $26.5 billion in U.S. revenue.[2]

29. In both the U.S. and abroad, Siemens and Siemens AG provide a massive range of products and services, including in industries like infrastructure and buildings, automation, energy, lighting, electrical, medical, and transportation and logistics. Siemens and Siemens AG provide these products and services for residential homes and businesses alike.

30. For homeowners, Siemens may be best known for their residential and household electrical products. Siemens designs and manufactures electrical panel

[1] *Siemens in the USA. For the USA.*, Siemens.com (last visited Nov. 20, 2020), https://new.siemens.com/us/en/company/siemens-in-the-usa.html.

[2] *About Us*, Siemens.com (last visited Nov. 20, 2020), https://new.siemens.com/us/en/company/about.html

boxes (load centers) and circuit breakers for residential use. Electrical panel boxes (load centers) and circuit breakers in homes help distribute power throughout the house and provide safety measures that protect against electrical fires and injuries caused by electrical surges, electrical arcs, ground faults, short circuits, and other unintended electrical issues.

A. Residential Arc Fault Circuit Interrupters

31. Circuit breakers are an essential device in modern homes and provide important safety controls that protect against electrically caused injuries and fires. Circuit breakers are placed in an electrical panel box (load centers) and redirect electricity through individual closed circuits to different rooms and appliances throughout the home.

32. Standard circuit breakers have been used for decades, previously being equipped with a fuse that "blows" in the presence of too much current. When the current exceeds a threshold level, the wires in the fuse would overheat and melt, breaking the circuit.

33. Modern circuit breakers perform the same function—they "trip" to break the circuit and cut off electricity when the current exceeds safe levels. Unlike traditional breakers, however, modern standard breakers are multi-use. Rather than relying on melted fuses to break the circuit, modern breakers use a contact controlled by thermomagnetic parts that activate when dangerous levels of current occur,

tripping the circuit breaker. When a standard circuit breaker trips due to excess current, the circuit can be reengaged by switching the circuit breaker back to the "on" position after the cause of the excessive current is removed.

34. In addition to circuit breakers that protect against electrical excessive current (overcurrent), advanced modern breakers protect against two additional electrical dangers: ground faults and electrical arcing.

35. Ground faults occur when the return flow of electricity is through the ground, rather than through the intended circuit. Ground faults are sometimes described as electrical leakage because the electricity is "leaking" out of the circuit to the ground.

36. Modern Ground Fault Circuit Interrupters ("GFCI") identify and trip in the presence of a ground fault. GFCIs are designed either as a circuit breaker to be installed in an electrical panel box (load centers) or as an outlet installed directly in a wall (usually, GFCI outlets will have buttons stating "test" and "reset"). GFCIs work by comparing outgoing and incoming current. If the currents do not match (4-6mA), some of the current is "leaking" out of the circuit, indicating there is a ground fault and causing the GFCI breaker or outlet to trip to break the circuit.

37. The National Electric Code ("NEC") —a set of residential, housing and other occupancies electrical standards adopted in many cities and states—first required the use of GFCIs in the 1970s.

38. Arc Fault Circuit Interrupters ("AFCI") are the newest residential breaker type and are designed to trip in the presence of unintended and dangerous electrical arc faults. Like properly functioning GFCI breakers, AFCI breakers are designed to identify and distinguish between harmless and dangerous electrical arcs so that the circuit breaker trips only upon identifying a dangerous electrical arc.

39. An arc fault is a prolonged electrical circuit created when current flows through an unintended medium, usually directly through the air or loose connections, instead of through the wires in a circuit.

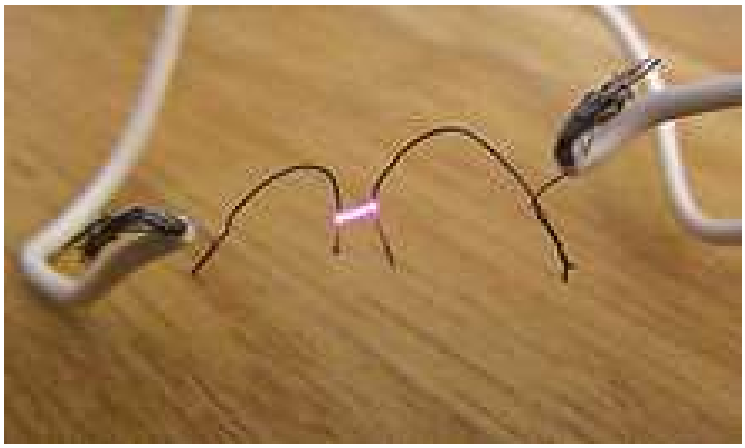


Image 1. An example of electrical arcing. The current is flowing through the air between two nodes, completing a circuit. The arc typically emits light and heat.

40. Unintentional, dangerous electrical arcing in a home may be caused by various issues, including loose electrical connections, frayed or broken wires, or the operation of old or broken household appliances. Unintended electrical arcs can occur in almost any part of a circuit, including wire splices, circuit breaker connections, wall switches, receptacles, or within appliances.

41. While some harmless electrical arcing is common in homes and appliance (like when an appliance starts up) and poses no danger, unintended electrical arcing can create high intensity heating at the point of the arc and sometimes result in a flash of light, called an arc flash. Unintended and uncontrolled electrical arcs can reach temperatures of 10,000 degrees Fahrenheit, enough to create sparks and ignite wood, fabric, and debris. For that reason, prolonged dangerous and unintended electrical arcs pose a significant fire risk in homes. Indeed, approximately half of the 48,000 annual residential fires in the U.S. are attributed to arc faults.

42. AFCIs are designed to identify and protect against dangerous electrical arcs. To do so, each manufacturer has developed its own, unique advanced electronic circuitry that measures fluctuations in the frequency, variations, and amplitude of a current's waveform. The advanced circuitry used in AFCIs is intended to detect prolonged, dangerous arcs by identifying non-periodic or sporadic current waveforms. When the AFCI detects a waveform indicative of a dangerous arc, the AFCI breaker trips to prevent the possibility of a fire.

43. The NEC first recommended the installation of AFCIs in 1999 for use in dwelling unit bedroom circuits.

44. At the time, the NEC described AFCIs as "new devices" and as "circuit breakers with electronic circuitry capable of recognizing the chaotic waveforms

characteristic of electrical arcing. The devices are calibrated internally to trip, based on the likely ignition energy being released in the arc." The NEC described the "fault current levels" at which AFCIs should trip as those capable of "produc[ing] secondary ignition of adjacent combustible materials[.]" The NEC adopted the standards set forth by the Underwriters Laboratories, an organization that provides standards for electrical products.

45. By 2017, the NEC required that AFCIs be installed in all new residential construction and in practically every room of a home, including: areas when receptacle boxes (load centers) are replaced, and in all 120 volt, single phase, 15 and 20 ampere branch circuits supplying lighting and power outlets or devices installed in essentially all dwelling unit rooms like kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas. As a result of these rules, AFCIs have become a commonly required and frequently used breaker in modern homes.

46. AFCI breaker manufacturers face unique challenges associated with AFCIs: not all arcing signatures and waveform fluctuations indicate a dangerous arc. Waveform fluctuations occur all the time when appliances are used and currents flow, and not all indicators of an arc represent a potentially dangerous or fire-causing electrical arc.

47. Devices with electric motors like vacuums, treadmills and power tools produce normal electrical arcs during normal operation that pose no danger of a fire. Arcing also frequently occurs when power outlets or appliances initially pull electricity from the outlet upon being turned on. As new appliances have been developed and other common appliances improved and advanced over time, the types of harmless arcs and arcing signatures that appliances create have also changed.

48. The National Electric Manufacturers Association ("NEMA") is an American National Standards Institute- accredited Standards Development Organization made up of business leaders, electrical experts, engineers, scientists, and technicians. NEMA has indicated that many home electrical products (which it calls "HEPs") may generate waveforms that appear to be electrical arcs: "When many electrical products are initially energized, it is common for them to draw a high amount of current for a few cycles as the product reaches its normal operating performance level. This start-up or inrush current is typically several times the operating current of the product. If the maximum current during start-up (or for any short period of time during the operation of the HEP is kept below 100 amperes RMS, unwanted tripping of AFCIs, and standard breakers, should not occur."[3]

[3] *Recommendations on AFCI Home Electrical Product Compatibility*, NEMA, at 5 (2011), https://structuretech1.com/wp-content/uploads/2016/02/AFCI-Tripping-NEMA-Compatibility.pdf.

49. As the NEC has expanded the areas in a household where AFCIs are required—from, initially, only bedrooms to now including kitchens, family rooms, dining rooms and more—the number and variety of appliances on outlets containing AFCIs have expanded. Thus, the potential for normal, electrical arcing or arcing signatures to occur on circuits with AFCIs has also increased.

50. Those temporary, harmless arcs or arcing signatures that appear in a circuit, however, do not pose a risk of a fire. AFCI breakers, therefore, must be capable of identifying those harmless arcs and distinguishing them from dangerous, unintended, and prolonged arcs that may pose a risk of a fire. Properly functioning AFCIs should only trip in the presence of dangerous arcs. Thus, AFCI manufacturers have had to update their AFCI breakers to recognize harmless arcs and harmless arcing signatures associated with a broader variety of electrical devices used in different rooms in the house. Additionally, as the number and type of appliances used on AFCI-containing circuits has increased and advanced, AFCI manufacturers have had to ensure their AFCI devices remain capable of distinguishing harmless arcs and arcing signatures from dangerous arcs. AFCI breakers that cannot adequately distinguish between harmless and dangerous arcs and, therefore, trip even in the presence of harmless arcs are said to be experiencing "nuisance tripping."

51. Nuisance tripping "arises when an appliance or load is plugged into an outlet and its' electrical signature is misinterpreted as an arc by the AFCI and the AFCI by design cuts power. Hence, nuisance trips." To prevent nuisance tripping, most manufacturers "test appliances", record harmless "electrical signature[s]" and make sure "[t]hat signature is logged into the memory of the AFCI device so it knows not to trip . . . ."[4]

52. Researchers have similarly commented that the "diversity and the potency of [electric] background noise require that arc-detection methods must be able to distinguish between it and the erratic behavior associated with the actual occurrence of an arc fault."[5]

53. AFCIs that nuisance trip not only fail at their essential purpose of accurately "detect[ing] an arc regardless of location . . . to further reduce safety concerns" but also create additional challenges and hazards. For instance, "[n]uisance tripping can cause inconvenience to the user" and "[u]nnecessary interruption of power can cause other safety issues as well as loss of work, data, or

[4] *Understanding AFCI (Arc-Fault Circuit Interrupter) Challenges and Addressing Nuisance Tripping*, Leviton Blog (Oct. 28, 2021), https://blog.leviton.com/understanding-afci-arc-fault-circuit-interrupter-challenges-and-addressing-nuisance-tripping

[5] Stephen McConnell, *et al.*, *Evaluation Method for Arc Fault Detection Algorithms*, Conf. Paper for Photovoltaic Special Conference (Jun. 2014).

information" and "[n]uisance tripping can incur financial loss and heighten safety risks and therefore needs to be minimized."[6]

54. Nuisance tripping has long been recognized as an issue for AFCI breakers. When AFCIs were introduced in the NEC, AFCI breaker manufacturers acknowledged "[o]ne of the most difficult aspects of the new technology is coming up with a device that knows the difference between an arc from normal operations, such as unplugging a cord or opening a switch, and a destructive arc. In short, the devices cannot nuisance trip."[7] "An effective arc detection algorithm must not only unfailingly detect the presences of an arc but also must not nuisance trip or give false positives during signal input that contains only background noise."[8]

55. While, "[w]hen AFCIs were first introduced there were some initial tripping issues", experts in the field claimed that most "AFCI manufacturers have . . . continued to improve AFCIs" and "virtually eliminat[ed] past [tripping] issues."[9]

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[6] Taufik Taufik & Rosmaliati Muchtar, *Characterization of DC Arc Fault Currents in Low Voltage Residential Electricity*, Conf. Paper: Int'l Conf. on Applied Electromagnetic Tech. (Apr. 2018).

[7] Frederic P. Hartwell, *Illustrated Changes in the 1999 NEC – Part 1 of 4*, EC&M (Sep. 1, 1998), https://www.ecmweb.com/content/article/20893354/illustrated-changes-in-the-1999-nec-part-1-of-4.

[8] McConnell *et al*., *supra* note 5.

[9] *Fast Facts*, afcisafety.org (last visited Nov. 23, 2020), https://www.afcisafety.org/afci-nec-considerations/fast-facts/#1477663207955-7e3d73a0-2845

56. Siemens, however, was not one of those manufacturers who capably resolved nuisance tripping in its AFCIs. Rather than "virtually eliminating" their nuisance tripping issues, Siemens' AFCI breakers continue to excessively nuisance trip, costing electricians and consumers time and money to address those issues and rendering the AFCI breaker ineffective and unusable.

B. Siemens Omitted and Concealed its AFCI Breakers' High Nuisance Trip Rate

57. Siemens sells a variety of circuit breakers for residential homes, including several types of standard breakers, GFCIs, AFCIs, CAFCIs (a type of AFCI that identifies different types of arcs) and combination breakers designed to be installed in Siemens electrical panels. Siemens' breakers are available for purchase from Siemens' Sales and Distributor locations,[10] including general hardware stores, like Home Depot, Lowes, and Ace Hardware, and are available through online sellers and wholesalers, like Amazon.

58. Additionally, Siemens purports to "offer a complete portfolio of electrical services, including preventive maintenance, emergency services, technical support, equipment reconditioning, retrofits and upgrades: that "[l]imit risk of

[10] *See Sales & Distributor Locator*, Siemens.com (last visited Nov. 23, 2020), https://new.siemens.com/us/en/company/distributorlocator.html

downtime", "[i]ncrease safety", "[e]xtend equipment lifecycle", "[r]educe operating costs", and "[m]eet regulatory compliance[.]"[11]

59. Siemens acknowledges that "Arc Flash Mitigation Solutions" must be capable of "ensur[ing] the reliability, uptime, performance, safety, and lifecycle management of your electrical systems infrastructure[,]" including "[a]void[ing] system downtime."[12] Siemens advises that "[p]oorly maintained electrical systems can result in costly downtime" but claims "Siemens can address potential problems before they shut you down with reliable electrical service."[13]

60. Siemens also recognizes the costs imposed by improperly functioning arc flash protection devices like AFCIs. On its website, Siemens notes that "[t]he costs of downtime are great, in terms of both lost productivity and equipment replacement, as are the costs of operating inefficient or unsafe systems"[14] caused by improper arc fault management.

61. Siemens residential arc fault products include its AFCI Circuit Breakers, Combination AFCI ("CAFCI") breakers, and its AFCI/GFCI dual

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[11] *Electrical Services*, Siemens.com (last visited Nov. 23, 2020), https://new.siemens.com/us/en/products/buildingtechnologies/services/electrical.html

[12] *Id.*

[13] *Id.*

[14] *Id.*

functioning breakers for both 1 and 2 poles. Siemens states that its AFCI breakers "mitigate the effects of arcing faults by functioning to de-energize the circuit when an arc-fault it detected."[15]

62. Siemens advertises its "1-pole Combination Type AFCI Breakers" and recommends they "be installed in dwelling unit kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry areas, or similar rooms or areas." It claims these breakers can "provide a valuable analysis tool to help electricians pinpoint [arc fault] . . . trip[s]."[16]

63. Siemens describes its "2-pole Combination Type AFCI Breakers" as an "[i]ndustry exclusive multi-wiring/shared neutral solution."[17]

64. According to Siemens, both its 1-pole and 2-pole AFCI breaker types indicate whether a trip was due to an arc fault or to an electrical surge. Siemens claims its AFCI breakers "[p]rovide electricians valuable time savings in installation."[18]

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[15] *Residential AFCI Circuit Breakers*, Siemens.com (last visited, Nov. 23, 2020), https://new.siemens.com/us/en/products/energy/low-voltage/residential-circuit-breakers/residential-afci-circuit-breakers.html

[16] *Id.*

[17] *Id.*

[18] *Id.*

65. Rather than saving electricians and customers time, however, Siemens' AFCI breakers are defective and frequently and unnecessarily trip in the presence of common and harmless arcs. The algorithms Siemens' breakers use to identify dangerous arcs fail to distinguish between dangerous arcs and harmless arcs (for example, from commonly used appliances), which causes the breakers to trip where no, or otherwise harmless, electrical arcing is occurring. Siemens has been unable, or unwilling, to update its AFCIs to recognize harmless arcing signatures created by the normal use and operation of everyday appliances. Thus, when used on a circuit that may power common appliances, the Siemens' AFCI breaker repeatedly nuisance trips.

66. Unlike standard breakers or GFCIs, AFCI breakers vary significantly between manufacturers. For both standard breakers and GFCIs, the mechanism causing the trip is straightforward and universal. All standard breakers rely on the same mechanism to guard against the same harm: an increase in voltage to an unsafe level energizes magnets within the breaker that pull the circuit shut. GFCIs also rely on similar mechanical devices to guard against ground faults: a sensor that identifies and causes the breaker to trip upon a discrepancy in incoming and outgoing current, which indicates electricity is "escaping" the circuit through a ground fault.

67. AFCIs, however, do not operate using a simple, universal mechanism. Rather, each manufacturer must design and develop circuitry and algorithms capable

of identifying and evaluating the waveforms of the electrical current. Each manufacturer has adjusted the circumstances, like the amount or length of prolonged unexpected waveforms, under which an AFCI breaker will trip to adjust to electronic noise or arcing signatures from common appliances that should not cause the breaker to trip.

68. AFCI breakers, therefore, vary in design, circuitry, function, and sensitivity between manufactures. As NEMA indicated, upon introducing AFCIs, manufacturers have had to adjust and update the design of their AFCIs to prevent nuisance tripping, especially as appliances have continued to change over time and as the NEC has expanded the number of rooms requiring use of AFCIs. Where an AFCI breaker's algorithm fails to distinguish harmless arcs or arcing signatures created by common appliances from dangerous ones, the breaker may improperly trip.

69. An AFCI breaker that nuisance trips in the presence of harmless arcs defies the basic and fundamental purpose of an AFCI, which is to identify and warn homeowners of a dangerous arc, and trip to prevent a possible fire. When an AFCI breaker exhibits nuisance tripping, it has failed to correctly identify a dangerous arc and prevents the normal use of the circuit even though no dangerous arc or arcing risk exists. Breakers experiencing nuisances tripping must be replaced with a

properly functioning AFCI breaker. Otherwise, the circuit with the defective AFCI breaker is rendered unusable.

70. Commercial businesses and consumers who installed Siemens' AFCI breakers have found that, upon installation of Siemens' AFCI breakers, they experience frequent, unexplainable tripping even where no identifiable arcing is occurring. These include brand-new, newly installed AFCI breakers that, were they functioning properly, should not be tripping unless an actual, dangerous arc existed in the circuit. Those breakers trip, however, even where there is no such dangerous arcs in the circuit.

71. Siemens knew that its AFCI breakers experienced abnormally high rates of nuisance tripping and omitted and concealed that fact from electricians and consumers. Rather, it represented that its AFCI breakers operate normally. Nuisance tripping, however, is not part of the normal operation of a correctly functioning AFCI.

72. Siemens has received numerous complaints directly and online describing its AFCIs high rate of nuisance tripping. In one electrician forum, a frustrated electrician wrote a post in 2019 titled "Siemens AFCI nuisance tripping … help!":

> I ran 4 new circuits, in an old house, all new wires, new Siemens AFCI breakers. All 4 have been tripping. One Samsung refrig., two countertop outlets, one microwave. In KY, all new circuits must be AFCI. Replaced all 4 new AFCI breakers with new ones. Microwave and ref are working with

second new breakers. Now the two kit. Countertop ones are tripping AGAIN.[19]

73. In a post from 2017, a member wrote:

I have installed some new Siemens afci/gfci breakers and am having some AFCI trips that I [need to] find a solution for. The customer was using a Griddle and when they turned the Kitchen-aid mixer on and the breaker tripped as soon as the Mixer was turned on. The mixer alone does not trip the breaker but the mixer with the griddle or toaster will trip the breaker with and AFCI fault. I was able to recreate the fault on the second kitchen circuit. I also tried the mixer with the coffee maker and the breaker didn't trip. I am wondering if someone has had any problems similar to mine.[20]

74. That same year, another member wrote:

We also had about a year long stretch where we were having lots of issues with Siemens AFCI breakers. Lots of nuisance tripping, especially with the two pole. That seems to have calmed down now in the last 6 months. The Siemens rep claims there wasn't anything wrong.[21]

75. In another forum, an electrician posted "Siemens AFCI/GFCI Breaker Woes":

So.....customer calls last week and says lighting circuit keeps tripping. I go over and find that the fixture seems to have had a short in it from the factory. Installed a pigtail as a temporary light and all fixed. Got a call today saying all the kitchen circuits are tripping. So I went over to confirm. Sure enough

[19] *Siemens AFCI Nuisance Tripping…Help!*, Mike Holt's Forum (last visited, Nov. 24, 2020), https://forums.mikeholt.com/threads/siemens-afci-nuisance-tripping-help.147943/

[20] *Siemens AFCI/GFCI Help Needed*, Mike Holt's Forum (last visited, Nov. 24, 2020), https://forums.mikeholt.com/threads/siemens-afci-gfci-help-needed.132773/

[21] *Filters for AFCI Nuisance Tripping*, Mike Holt's Forum (last visited, Nov. 24, 2020), https://forums.mikeholt.com/threads/filters-for-afci-nuisance-tripping.132330/

they are tripping microwave, toaster, mixer. I brought my 1 7/8" hammer drill in and only managed to trip one. I checked all the connections and am out of ideas.[22]

76. Additionally, one reviewer on Amazon's website wrote:

Junk, 2 out of the 4 I purchased constantly trip. What a waste of money. Replaced with standard 15 amp breaker and no problems. Tried trouble shooting by ensuring all power sources and switches were unplugged/off and yet it still tripped. Do not recommend this product[23]

77. A reviewer on Home Depot's website wrote:

Siemen's AFCI breaker is ridiculously sensitive to nuisance trips. The breaker tripped when the toaster popped, the microwave was started and at all times of the day or night when the refrigerator cycled.[24]

78. On an electricians' forum on the website, reddit.com, one user wrote:

Just had a kitchen remodel and electrical panel replacement (needed more dedicated circuit breakers for the kitchen). Everything through licensed contractors with full permits.

A dedicated line was run to the microwave (combination microwave/hood over our range). It is a very nice, higher end 8-year old GE microwave.

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[22] *Siemens AFCI/GFCI Breaker Woes*, Electrician Talk (last visited, Nov. 24, 2020), https://www.electriciantalk.com/threads/siemens-afci-gfci-breaker-woes.205809/

[23] *Customer Review – N8Dogg*, Amazon.com (last visited, April 15, 2024) https://www.amazon.com/gp/customer-reviews/R1KBSTY922EYIO?ref=pf_vv_at_pdctrvw_srp

[24] *Type QAF 20 Amp Double-Pole Combination AFCI Circuit Breaker by Siemens*, HomeDepot.com (last visited, Nov. 24, 2020), https://www.homedepot.com/p/Siemens-Type-QAF-20-Amp-Double-Pole-Combination-AFCI-Circuit-Breaker-Q220AFCP/202253104

> The breaker for this dedicated circuit is a Dual Function AFCI/GFCI Circuit Breaker (Siemens, 15 amp). The microwave manual recommends a dedicated 15 amp circuit.
> The microwave works fine for a few days, then suddenly it starts tripping the breaker within 5 seconds of starting it, no matter what is in it. I've tried popcorn, cup of water, full microwave dinner. Doesn't seem to matter what else is going on in the house (e.g. A/C, oven on) or even if the hood fan is being used. Then it will be Ok for a while, and then the same problem again.[25]

79. The many public complaints and others made directly to Siemens describing Siemens' AFCI breakers as exhibiting nuisance tripping, put Siemens on notice that it had made available for sale defective Siemens' AFCI breakers that do not function properly or as advertised.

80. Additionally, one electrical distributor reported that Siemens' tested supposedly defective breakers and confirmed that they trip in inappropriate circumstances, leading to nuisance tripping.[26] Siemens tested hundreds of breakers returned as defective and found they trip in at least three scenarios: (1) an actual arc, (2) where an appliance is drawing high amps, or (3) electronic noise caused by the

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[25] *Microwave Tripping New Combination AFCI/GFCI Breaker – Seeking Advice Please*, Reddit.com (last visited, Nov. 24, 2020), https://www.reddit.com/r/electricians/comments/954fvv/microwave_tripping_new_combination_afci_gfci/

[26] *Nuisance Tripping Arc Fault Breaker Findings*, EB Horsman & Son (last visited, April 15, 2024), https://ebhorsman.com/product-spotlights/nuisance-tripping-arc-fault-breaker/

loads on the circuits.[27] Siemens deemed these breakers non-defective[28] even though its AFCI breakers should ***only*** be tripping in ***one*** of those circumstances—where there is a dangerous arc. Thus, Siemens knew from its own testing that its breakers were not adequately distinguishing between dangerous arcs and the arcing signatures caused by common household appliances or electronic noise, and that those defects led to unnecessary nuisance tripping.

81. Despite knowing its AFCIs were defective, Siemens never disclosed and actively concealed that its AFCIs nuisance tripped, including in the presence of harmless arcs and due to the use of common appliances. Siemens never warned the public that its AFCI breakers were subject to high rates of nuisance tripping even where no dangerous arc existed in the circuit or that tripping may be due to defects in its breakers rather than an actually dangerous arc. Siemens AFCI breaker labels and brochures omit any information describing that Siemens AFCI breakers trip when using common household appliances or in the presence of electronic noise, even when no dangerous arcing is occurring in the circuit. Siemens knew or should have known the types of appliances that were incompatible with its breakers and the sources of "electronic noise" that affected its breakers' performance, but never disclosed that fact to potential purchasers.

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[27] *Id.*

[28] *Id.*

82. Instead, Siemens tried to deflect blame for any nuisance tripping of its AFCI. Siemens publicly claimed that nuisance tripping is a "myth" or, alternatively, that it is a good thing – a safety feature. For instance, in 2017, one Siemens employee gave an interview to Electrical Contractor magazine, stating that:

> People believe that certain arc fault breakers are defective because they frequently trip. People need to think of these not as 'nuisance tripping' but rather as 'safety alerts.' The majority of the time, these breakers trip because they are supposed to. They are tripping due to some type of arcing event on the circuit.[29]

83. Those claims misrepresented the fundamental purpose of AFCIs and the reason Siemens' AFCI were tripping. Tripping in the presence of a harmless arc or arcing signature is not a safety feature—it is a defect. AFCIs are not supposed to trip and break the circuit where no dangerous arcs occur, or where the only arcing signatures are harmless or caused by common appliances. Indeed, when AFCIs were first introduced, the NEC made clear that AFCIs need to be designed to, "know[] the difference between an arc from normal operations, such as unplugging a cord or opening a switch, and a destructive arc."[30] The NEC emphasized that "[i]n short, the devices cannot nuisance trip."[31] When Siemens AFCIs trip where no dangerous

[29] William Atkinson, *Debunking Six AFCI Myths*, Electrical Contractor (May 1, 2017), https://www.ecmag.com/section/systems/debunking-six-afci-myths

[30] P. Hartwell, *supra* note 4.

[31] *Id.*

arcing is occurring, that is not the intended purpose nor the normal operation of an AFCI.

84. Siemens also put the blame on homeowners, homebuilders, and electricians, claiming that any AFCI nuisance tripping was due to "'stab' receptacles, where wires are spring-loaded into the backs of the receptacles, instead of wiring around screws" or caused by "homeowners [who] jam plugs into spring-loaded receptacles or pull them out roughly[.]"[32] Siemens reiterated that "this is not 'nuisance tripping'" but "is a 'safety alert.'"[33]

85. Similarly, in a presentation titled, "Debunking the Myths of AFCI" a Siemens employee claimed that nuisance tripping was the result of "creative wiring practices."[34] Siemens further asserted that Siemens had created "Solutions" to nuisance tripping, including providing "excellent arc discrimination and enhanced electronics"[35] when its own testing of its breakers proved that it did not adequately distinguish between dangerous arcs and household appliances.

86. In 2018, Siemens released a troubleshooting guide to provide "tips" on how to prevent tripping in its AFCI breakers. The troubleshooting guide

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[32] *Id.*

[33] *Id.*

[34] Ashley Bryant, *Debunking the Myths of AFCI*, Indep. Electrical Contractors (2018), https://slidetodoc.com/debunking-the-myths-of-afci-presented-by-ashley/

[35] *Id.*

acknowledges that "[d]etermining the cause of an AFCI trip can be confusing and time-consuming" but claims its troubleshooting guide will provide a "few tricks [that] can save the homeowner, time, money, and the stress of an AFCI trip."[36]

87. The guide claims that Siemens AFCI breakers "have been thoroughly tested to dramatically decrease the amount of nuisance tripping."[37] The guide suggests that any nuisance tripping is due to the fault of the homeowner, homebuilder, or the electrician. For instance, the guide provides steps homeowners and electricians must take to decrease unwanted tripping:

> **Homeowners**
>
> There are six preventative factors homeowners can take in order to decrease the chance that a breaker will trip.
>
> • First, all connections between the light socket and the light bulb base should be tight. An arc can occur in a loose connection, which will cause the AFCI breaker to trip.
> • Beware that the circuit is not overloaded with an excessive amount of electronics. The breaker is only able to support a specified amount of wattage, and if exceeded, the breaker will trip.
> • Protect electronics on surge protectors. They will protect the electronics from times of high electrical surges, like thunderstorms.
> • All electronics purchased should be Underwriters Laboratories (UL) listed, or equivalent, and comply with part 15 of the FCC rules, or they may cause unnecessary tripping.
> • Make sure furniture is not on or pushing against electrical wires.

[36] *Troubleshooting Guide, supra* note 15.

[37] *Id.*

> • If any blackened plugs, very damaged wires, or noisy circuit breakers are discovered, an electrical problem has occurred and the homeowner should call an electrician.
>
> **Electrical Contractors**
>
> Electrical contractors can also take some preventative steps during the installation process.
>
> • Ensure properly maintained tools are used, i.e. sharp blades.
> • Route wires in strategic areas so homeowners and other trades are less likely to pierce through a wire.
> • If possible, perform work after the other trades, i.e. HVAC and plumbing, have completed.
> •Wire receptacles around the screw instead of backstabbing; it creates great wear and tear on the wiring over time.[38]

88. The guide, thus, implies that if an AFCI breaker is tripping, it is either because it has detected a dangerous arc or because of errors by the homeowner, homebuilder, or electrician. Like its brochures and labels, Siemens' troubleshooting guide never advises its customers that the problem might be with its AFCI breakers because, due to a defect, Siemens' AFCI breakers are prone to nuisance tripping in the presence of harmless arcs or due to the foreseeable use of basic household appliances.

89. Siemens also created and advertised "innovated trip indicators" and "Siemens exclusive Intell-Arc Diagnostic Tool" that supposedly "offer help to the troubleshooting process."[39] Like the troubleshooting guide, Siemens bills these tools

[38] *Id.*

[39] *Id.*

as means to help save time and money and identify the cause of a tripped breaker. Siemens states that the "[i]ndustry exclusive LED indicators provide a valuable analysis tool to help electricians pinpoint the type of trip."[40] These tools, however, fail to notify homeowners, homebuilders, electricians, or other readers that the breaker may be tripping due to harmless arcs or that the cause of the nuisance tripping is a defect in the breaker itself. Thus, these tools help conceal the underlying issue with Siemens' breakers and perpetuate Siemens' misrepresentation that nuisance tripping is the fault of the homeowner, homebuilder, electrician.

90. Siemens knew or should have known that its AFCI breakers contain defects that cause them to experience high rates of nuisance tripping, and those defects are due to Siemens, not to the actions of homeowners, homebuilders, or electricians. Despite its claims to the contrary, an AFCI breaker is not functioning properly when it trips during the foreseeable, routine use of an appliance or due to electronic noise. Indeed, Siemens' advertisements claim that its AFCI breaker are designed only to trip in the presence of arc faults: "The device is intended to mitigate the effects of arcing faults by functioning to de-energize the circuit when an arc fault is detected."[41]

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[40] *Residential AFCI Breakers*, *supra* note 15.

[41] *Arc Fault Circuit Breakers or AFCIs*, Siemens.com (last visited, Mar. 17, 2022), https://new.siemens.com/us/en/products/energy/low-voltage/residential-circuit-breakers/residential-afci-circuit-

91. Siemens' own findings and the many complaints by electricians, homebuilders, and homeowners demonstrated its AFCI breakers nuisance trip in many other circumstances. Despite that fact, Siemens does not and has never warned users that its AFCI breakers nuisance trip due to defects in the breakers' ability to identify an actual arc or distinguish an actual arc from a normal appliance or electronic noise. Rather, Siemens falsely claims nuisance tripping is a "myth" or, alternatively, that it is a safety feature. That is not the case. Siemens' AFCIs are defective and trip in inappropriate circumstances, causing homeowners, homebuilders, and electricians harm.

C. Plaintiffs Suffered Injuries Due to Defective Siemens' AFCI Breakers

92. Siemens recognized the significant time and effort that electricians, homebuilders, and consumers might exhaust investigating an improperly tripping breaker.[42] Rather than saving electricians time, as Siemens promised, its breakers result in wasted time and effort investigating the cause of the nuisance tripping when the fault is in the breaker itself. Experienced electricians, homebuilders, and consumers have spent an extraordinary amount of time investigating the possible

breakers.html#:~:text=Combination%20Type%20Arc%20Fault%20Circuit,an%20arc%2Dfault%20is%20detected.

[42] *Troubleshooting Guide*, *supra* note 15 ("Determining the cause of an AFCI trip can be confusing and time-consuming . . . .")

causes of Siemens' AFCI breakers that frequently and unnecessarily trip only to find that harmless electrical arcs are improperly causing the Siemens' AFCI breaker to trip.

93. Electricians, homebuilders, and consumers, such as Plaintiffs, who purchased defective Siemen' AFCI breakers have lost the value of the breaker because, after performing extensive rework to identify the problem, the electrician, homebuilder, or customer incurred costs replacing the defective Siemens' AFCI breaker which resolved the nuisance tripping.

THE COMMERCIAL PLAINTIFFS

Kevin Brnich Electric LLC

94. Kevin Brnich Electric LLC is a Pennsylvania limited liability company owned by Kevin Brnich. Brnich has been an electrician for 25 years and has used Siemens' products, including Siemens' panel boxes and breakers. Where he has used Siemens, he has done so because his customers have a Siemens' panel, which requires a Siemens' breaker be used and, additionally, because his supplier carries Siemens electrical products.

95. As part of its services, KB Electric purchases and installs AFCI breakers, including Siemens' AFCI breakers. It has purchased and installed Siemens' AFCI breakers within the last year, including breakers that experienced nuisance tripping.

96. The State of Pennsylvania, where KB Electric principally operates, has adopted the International Residential Code, which includes requirements that AFCIs be used in family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreations rooms, closets, hallways, kitchen, and laundry areas, and other similar areas.

97. When installing Siemens' AFCI breakers, however, KB Electric has found many of the breakers trip for no reason. Even after investigating potential causes of the nuisance tripping, KB Electric could not identify the cause of the nuisance tripping, including potential issues like spliced wires, appliances, incorrect installation, or other potential causes.

98. Replacing the malfunctioning Siemens AFCI breaker with a new Siemens breaker has not resolved the issue. KB Electrical found that, by swapping Siemens' AFCI with another brands' AFCI breaker often resolved the nuisance tripping.

99. KB Electrical's supplier informed it that Siemens' AFCIs required a technology update to resolve the nuisance tripping, which may be occurring due to incompatibilities between Siemens' AFCIs and appliances and other common household electronics. Based on these representations, KB Electrical expected the nuisance tripping issue with Siemens' AFCIs would be resolved and continued to purchase Siemens' AFCIs, including for its customers with Siemens' panels where

Siemens' AFCIs must be installed by code. However, the nuisance tripping issue has continued.

100. Had KB Electrical known, and Siemens not omitted, that Siemens' AFCIs contained an algorithm incapable of distinguishing dangerous and harmless arcs, which trip in the presence of harmless arcs, including the use of common appliances, KB Electrical would not have purchased or used Siemens' AFCIs and would have advised its customers not to use Siemens' AFCIs.

101. Siemens' defective AFCI breakers have cost KB Electrical significant time and money. KB Electrical has purchased hundreds of Siemens breakers and has had to replace many brand new Siemens' breakers because of nuisance tripping that occurred right out of the box. KB Electric lost the money it paid for the defective Siemens' AFCI breakers that it could not use because they were defective. These costs were not passed on to KB Electric's customers.

102. In addition to the costs of the breakers, KB Electric lost substantial, uncompensated time investigating and attempting to resolve the cause of the tripping. Siemens troubleshooting guide indicates a trip may have several causes attributable to the wiring or appliances in the circuit. Siemens' guide, however, does not state that the tripping may be due to a defective breaker. KB Electric, therefore, spent time needlessly investigating the potential cause of the tripping when the true

cause was Siemens' defective breakers. KB Electric was not compensated for this time by its customers.

103. Electricians, homebuilders, and consumers, such as Plaintiffs, who purchased defective Siemens AFCI breakers have lost the value of the breaker because, after performing extensive rework to identify the problem, the electrician, homebuilder, or customer incurred costs replacing the defective Siemens' AFCI breaker, which resolved the nuisance tripping.

Bolt Electric LLC

104. Bolt Electric LLC is a limited liability company in Maine that provides electrical services to its customers.

105. As part of its services, Bolt Electric purchases and installs AFCI breakers, including Siemens AFCI breakers. It has purchased and installed Siemens AFCI breakers within the last year, including breakers that experiences nuisance tripping.

106. The State of Maine, where Bolt Electric principally operates, has adopted the NEC with some modifications. Maine requires AFCI protection (whether breakers or AFCI outlets) to be installed in practically all dwelling unit rooms, including kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreational rooms, closets, hallways, laundry rooms, or similar areas or rooms.

107. Bolt Electric has significant experience installing AFCI breakers and resolving nuisance tripping.

108. When installing Siemens AFCI breakers, however, Bolt Electric found many of the breakers trip for no reason. Even after investigating potential causes of the nuisance tripping, Bolt Electric could not identify the cause of the nuisance tripping, including potential issues like spliced wires, appliances, incorrect installation, or other potential causes.

109. Rather, the cause of the nuisance tripping was defective Siemens' AFCI breakers, which failed to perform their basic function and repeatedly and unnecessarily tripped where no dangerous electrical arcing was occurring. Had Bolt Electric known, and Siemens not omitted, that Siemens' AFCIs contained an algorithm incapable of distinguishing dangerous and harmless arcs, which trip in the presence of harmless arcs, including the use of common appliances, Bolt Electric would not have purchased or used Siemens' AFCIs and would have advised its customers not to use Siemens' AFCIs.

110. Siemens' defective AFCI breakers have cost Bolt Electric significant time and money. Bolt Electric has purchased hundreds of Siemens breakers and has had to replace many, brand new Siemens breakers because of nuisance tripping that occurred right out of the box. Bolt Electric lost the money it paid for the defective

Siemens AFCI breakers that it could not use because they were defective. These costs were not passed on to Bolt Electric customers.

111. In addition to the costs of the breakers, Bolt Electric lost substantial, uncompensated time investigating and attempting to resolve the cause of the tripping. Siemens troubleshooting guide indicates a trip may have several causes attributable to the wiring or appliances in the circuit. Siemens' guide, however, does not state that the tripping may be due to a defective breaker. Bolt Electric, therefore, spent time needlessly investigating the potential cause of the tripping when the true cause was Siemens' defective breakers. Bolt Electric was not compensated for this time by its customers.

Electricalifornia

112. Electricalifornia is a sole proprietorship owed by Drew Montoya and located in the State of California.

113. Montoya is an electrician with over 15 years of experience. In 2016, he started Electricalifornia as an electrical company that provides household and commercial electrical services, including wiring, installing electrical devices, investigating electrical issues, and installing panel boxes and circuit breakers. Electricalifornia is a member of the Commercial Class.

114. As part of its services, Electricalifornia purchases and installs AFCI breakers, including Siemens' AFCI breakers. It has purchased and installed

Siemens' AFCI breakers within the last year, including breakers that experiences nuisance tripping.

115. The State of California, where Electricalifornia principally operates, has adopted the NEC with some modifications. California requires AFCI protection (whether breakers or AFCI outlets) to be installed in practically all dwelling unit rooms, including kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreational rooms, closets, hallways, laundry rooms, or similar areas.

116. Electricalifornia has significant experience installing AFCI breakers and resolving nuisance tripping.

117. When installing Siemens' AFCI breakers, however, Electricalifornia has found many of the breakers trip for no reason. Even after investigating potential causes of the nuisance tripping, Electricalifornia could not identify the cause of the nuisance tripping, including potential issues like spliced wires, appliances, incorrect installation, or other potential causes.

118. Rather, the cause of the nuisance tripping was defective Siemens' AFCI breakers that failed to perform their basic function and repeatedly and unnecessarily tripped where no dangerous electrical arcing was occurring.

119. Siemens' defective AFCI breakers have cost Electricalifornia significant time and money. Electricalifornia has purchased hundreds of Siemens

breakers and has had to replace many, brand new Siemens' breakers because of nuisance tripping that occurred right out of the box. Electricalifornia lost the money it paid for the defective Siemens' AFCI breakers that it could not use because they were defective. These costs were not passed on to Electricalifornia's customers.

In addition to the costs of the breakers, Electricalifornia lost substantial, uncompensated time investigating and attempting to resolve the cause of the tripping. As Siemens troubleshooting guide indicates, a trip may have several causes attributable to the wiring or appliances in the circuit. Siemens' guide, however, does not state that the tripping may be due to a defective breaker. Electricalifornia, therefore, spent time needlessly investigating the potential cause of the tripping when the true cause was Siemens' defective breakers. Electricalifornia was not compensated for this time by its customers.

Zank Electric

120. Zank Electric LLC is a limited liability company in Wisconsin that provides electrical services to its customers.

121. As part of its services, Zank Electric purchases and installs AFCI breakers, including Siemens AFCI breakers. It has purchased and installed Siemens AFCI breakers within the last year, including breakers that experiences nuisance tripping.

122. The State of Wisconsin, where Zank Electric principally operates, has adopted the NEC, requiring AFCI protection (whether breakers or AFCI outlets) to be installed in practically all dwelling unit rooms in any residence.

123. Zank Electric has significant experience installing AFCI breakers and resolving nuisance tripping.

124. When installing Siemens AFCI breakers, however, Zank Electric found many of the breakers trip for no reason. Even after investigating potential causes of the nuisance tripping, Zank Electric could not identify the cause of the nuisance tripping, including potential issues like spliced wires, appliances, incorrect installation, or other potential causes.

125. Rather, the cause of the nuisance tripping was defective Siemens' AFCI breakers, which failed to perform their basic function and repeatedly and unnecessarily tripped where no dangerous electrical arcing was occurring. Had Zank Electric known, and Siemens not omitted, that Siemens' AFCIs contained an algorithm incapable of distinguishing dangerous and harmless arcs, which trip in the presence of harmless arcs, including the use of common appliances, Zank Electric would not have purchased or used Siemens' AFCIs and would have advised its customers not to use Siemens' AFCIs.

126. Siemens' defective AFCI breakers have cost Zank Electric significant time and money. Zank Electric has purchased hundreds of Siemens breakers and

has had to replace many, brand new Siemens breakers because of nuisance tripping that occurred right out of the box. Zank Electric lost the money it paid for the defective Siemens AFCI breakers that it could not use because they were defective. These costs were not passed on to Zank Electric customers.

127. In addition to the costs of the breakers, Zank Electric lost substantial, uncompensated time investigating and attempting to resolve the cause of the tripping. Siemens troubleshooting guide indicates a trip may have several causes attributable to the wiring or appliances in the circuit. Siemens' guide, however, does not state that the tripping may be due to a defective breaker. Zank Electric, therefore, spent time needlessly investigating the potential cause of the tripping when the true cause was Siemens' defective breakers. Zank Electric was not compensated for this time by its customers.

THE CONSUMER PLAINTIFFS

Charles Vodicka

128. Charles Vodicka is a resident of Asheville, North Carolina, and is a consumer of Siemens' electrical products, including its AFCIs.

129. The State of North Carolina, where Vodicka resides, has adopted the NEC with some modifications. North Carolina requires AFCI protection (whether breakers or AFCI outlets) to be installed in practically all dwelling unit rooms and accessible locations. That includes kitchens, family rooms, dining rooms, living

rooms, parlors, libraries, dens, bedrooms, sunrooms, recreational rooms, closets, hallways, laundry rooms, or similar areas or rooms.

130. Vodicka hired a builder and electrician, among others, to build his home in 2014. He had two 200 amp Siemens' panels installed in his home. To meet North Carolina's electrical code requirements, his builder and electrician installed Siemens' breakers, including Siemens AFCIs, in his Siemens' panel box.

131. Upon installation, several of Vodicka's Siemens-brand AFCIs experienced frequent nuisance tripping with no identifiable cause. He replaced four Siemens' AFCIs with brand new ones at his own expense, but the new breakers also tripped right out of the box. Eventually, Vodicka decided to replace his Siemens' AFCIs with a competitor's breaker. Since replacing his Siemens' AFCIs with competitors' breakers, he has not experienced any nuisance tripping with the competitor breakers.

132. Due to the issues with Siemens' AFCIs, Vodicka, at great expense, replaced his Siemens' panel boxes with another manufacturers' panel box to ensure he complied with local electrical codes, which require homeowners to use the same manufacturer's panel box and breakers. Since switching to competitor AFCI breakers and a competitor panel box, Vodicka has not had issues with nuisance tripping.

133. He has already spent thousands of dollars paying electricians to install the Siemens panel boxes and AFCIs, investigate the cause of nuisance tripping, attempt to resolve the nuisance tripping, replace the malfunctioning AFCIs with new ones and, subsequently, replace his Siemens' panel boxes.

134. Vodicka suffered injuries as a result of Siemens' defective AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers. He also incurred expenses hiring electricians to investigate and resolve nuisance tripping in Siemens AFCIs. Had he known that Siemens' AFCIs were subject to frequent nuisance tripping, especially on circuits using common household appliances, he would not have installed a Siemens' panel box or Siemens' AFCI breakers.

Patrick Cates

135. Patrick Cates is a resident of Newbury Park, California, and is a consumer of Siemens' electrical products, including its AFCIs.

136. The State of California, where Cates resides, has implemented an electric code based on the NEC. California requires AFCI protection in practically all dwelling unit rooms and accessible locations. That includes kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreational rooms, closets, hallways, laundry rooms, or similar areas or rooms.

137. Around October 2021, Cates moved into a new construction vacation home in Bridgeport, California. As part of the construction of that home, Cates hired a builder and electrician to, among other things, purchase and install Siemens' AFCIs according to the California electric code.

138. From the time Cates moved into his new home onward, he experienced frequent nuisance tripping of his Siemens' AFCIs with no identifiable cause. His Siemens' AFCIS would regularly trip when he used basic tools and appliances, including his power saw, garbage disposal, and his washer and dryer. Cates contacted his home builder to request his AFCIs be replaced with non-defective versions at no cost. To date, none of his Siemens' AFCIs have yet been replaced, and they continue to experience frequent nuisance tripping.

139. Cates suffered injuries as a result of Siemens' defective AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers. He also incurred expenses hiring his builder to investigate and resolve nuisance tripping in Siemens AFCIs. Had he known that Siemens' AFCIs were subject to frequent nuisance tripping, especially on circuits using common household appliances, he would not have installed Siemens' AFCIs.

Bryan Butakis

140. Bryan Butakis is a resident of West Chester, Pennsylvania, and is a consumer of Siemens' electrical products, including its AFCIs.

141. The State of Pennsylvania, where Butakis resides, has adopted the International Residential Code, which includes requirements that AFCIs be used in family rooms, dining rooms, living rooms, parlors, libraries, dens, sunrooms, recreation rooms, closets, hallways, kitchens, and laundry areas.

142. Around July 2021, Butakis moved into a new construction home in West Chester, Pennsylvania. As part of the construction of that home, Butakis hired a builder and electrician to, among other things, purchase and install Siemens' AFCIs according to the Pennsylvania electric code.

143. From the time Butakis moved into his new home onward, he experienced frequent nuisance tripping of his Siemens' AFCIs with no identifiable cause. His Siemens' AFCIS would regularly trip when he used basic appliances, including his refrigerator, which was powered off daily due to the unnecessary tripping of Siemens' AFCIs. Butakis contacted Siemens and his home builder to request his AFCIs be replaced with non-defective versions at no cost. Thus far, only 5 of his 15 AFCIs have been replaced, and Siemens has refused to replace the remaining 10 AFCIs because, it contends, they are not defective even though they also suffer from frequent nuisance tripping.

144. Butakis has suffered injuries as a result of Siemens' defective AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers. He also incurred expenses hiring his builder to investigate and resolve

nuisance tripping in Siemens AFCIs. Had he known that Siemens' AFCIs were subject to frequent nuisance tripping, especially on circuits using common household appliances, he would not have installed Siemens' AFCIs.

Rick Keyser

145. Plaintiff Keyser is a resident of the State of Nebraska and is a trained and certified electrician.

146. Starting in 2019 and continuing through early 2020, Keyser began the process of building his new home. Keyser, as a trained and certified electrician, performed the electrical work throughout the house, including wiring and installing the panel boxes and circuit breakers. He ensured his house complied with Nebraska's electrical code.

147. Nebraska has adopted the 2017 NEC and is in the process of implementing the 2020 NEC, which will not be completed until mid-2021. The 2017 NEC requires AFCI protection for all 120-volt, single-phase, 15 and 20-ampre branch circuits, including in most rooms in a home.

148. Keyser's home has a Siemens' electrical panel. As such, Keyser purchased new Siemens circuit breakers, including Siemens' AFCI breakers and installed them in his Siemens' panel. All the AFCI breakers were purchased new from a local Menards and came in their original packaging.

149. Several of the Siemens' AFCI breakers, however, did not function appropriately. Rather, upon installation, the AFCI breakers would frequently and unexpectedly trip. Keyser investigated potential causes for the unexpected tripping, including examining the wire switch boxes. However, Keyser could find no explanation for the nuisance tripping.

150. The frequent nuisance tripping made the defective Siemens' AFCI breakers unusable. As such, Keyser replaced the defective AFCI breakers with new ones made by a different manufacturer. Upon replacing the defective breakers, the nuisance tripping stopped.

151. Keyser suffered injuries as a result of the defective Siemens' AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers and paid more for the breakers than he would have had he known they contained a defect.

Tyler Barrette

152. Tyler Barrette is a consumer who at all times relevant to this action resided in Rochester, New Hampshire.

153. In 2020, Barrette purchased a new home, which was a new build containing a new Siemens electrical panel, which itself contained new Siemens AFCI breakers.

154. Almost immediately after moving into his new home, Barrette started experiencing frequent tripping in his Siemens AFCI breakers.

155. Barrette called an electrician to investigate the issues; the electrician found no evidence of dangerous arcing causing the tripping. The electrician replaced the malfunctioning Siemens AFCI breakers with brand-new Siemens AFCI breakers. However, the nuisance tripping continued even with the new breakers installed.

156. As a stopgap measure, the electrician replaced the Siemens AFCI breakers with a competitor's AFCI breakers, specifically, those made by Square D. Upon installation of the Square D AFCI breaker, the nuisance tripping stopped.

157. The electrician informed Barrette, however, that building code prohibited leaving a non-Siemens AFCI breaker in the Siemens electrical panel box. As a result, Barrette was required to pay approximately $1,500.00 to replace the entire Siemens panel and all of the Siemens AFCI breakers with a competitor's products in his new home.

158. Barrette has not had issues with nuisance tripping in his home since the Siemens panel and Siemens AFCI breakers were removed.

159. Barrette suffered injury as a result of Siemens' defective AFCI breakers. Not only was he required to pay for a new Siemens panel and AFCI breakers as part of purchasing his new home, he had to purchase an entirely new

panel and set of breakers when Siemens' AFCI breakers failed to function as intended.

Clifford Oakley

160. Clifford Oakley is a consumer who at all times relevant to this action resided in Jacksonville, Oregon.

161. In 2021, Oakley remodeled his kitchen and purchased a Siemens electric panel, which itself contained new Siemens AFCI breakers, for use with his new kitchen appliances.

162. After installing the Siemens panel with AFCI breakers, Plaintiff began to experience nuisance tripping almost immediately. Appliances such as his microwave and refrigerator would trip daily.

163. While attempting to troubleshoot the cause of the tripping, Plaintiff ran an extension cord from an outlet in another room and plugged his kitchen appliances into the extension cord. The appliances all functioned as intended when plugged into the extension cord.

164. Oakley was required to secure permits from his township to perform the remodel of his kitchen, and it must pass a final inspection. Because his kitchen appliances are useless with the Siemens panel and Siemens' AFCI breakers installed, Plaintiff is forced to keep them connected to the extension cord so they remain operable. As a result, Plaintiff believes that he will not pass the inspection because

he is forced to keep his kitchen appliances plugged in the main panel through the use of extension cords.

165. Oakley suffered injuries as a result of the defective Siemens' AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers and paid more for the breakers than he would have had he known they contained a defect.

Jason Wylie

166. Jason Wylie is a consumer who at all times relevant to this action resided in Texas. In 2022, Wylie paid to have a new personal home built.

167. After having a Siemens panel with Siemens AFCI breakers installed, Plaintiff began to experience nuisance tripping almost immediately.

168. To resolve the issue, Plaintiff hired an electrician, who evaluated the nuisance tripping and looked for potential causes. The electrician could not discern any reason for Wylie's AFCIs to be tripping repeatedly or at all.

169. Plaintiff's electrician replaced one of the AFCIs with a new, Siemens AFCI. However, the tripping continued on the replaced AFCI and on other installed AFCIs.

170. Plaintiff, again, hired an electrician to investigate the issue and no discernable caused was identified for the repeated nuisance tripping. Plaintiff's

electrician replaced several of the Siemens' AFCIs with new Siemens' AFCIs, which has not resolved the issue.

171. Plaintiff has had to continue to live with repeat and unexplained nuisance tripping of his AFCIs. He has been unable to resolve the nuisance tripping and, instead, is required to reset his breakers upon each trip.

172. Plaintiff contacted Siemens but never heard back.

173. Plaintiff suffered injuries as a result of the defective Siemens' AFCI breakers. Specifically, he lost the value he paid for the defective Siemens' AFCI breakers and paid more for the breakers than he would have had he known they contained a defect. He also incurred time and expense having to hire an electrician to investigate the nuisance tripping and attempt to resolve it.

CLASS ALLEGATIONS

174. Plaintiffs brings this action on behalf of themselves and all other similarly situated Class members pursuant to Rule 23(a) and (b)(3) of the Federal Rules of Civil Procedure and seek certification of the following Classes:

> **Consumer Class.** Any person in the United States who purchased a Siemens' AFCI breaker, except for resale.
>
> **Commercial Class.** Any business in the United States that installed and investigated, resolved, or attempted to resolve tripping presented by a Siemens' AFCI breaker.

175. The Class Period for all Classes starts from the length of the greatest applicable statute of limitations to the present.

176. In the alternative, Plaintiffs propose the following subclasses:

California Subclass. Any person or business entity located in California who purchased a Siemens AFCI breaker.

Maine Subclass. Any person or business entity located in Maine who purchased a Siemens AFCI breaker.

Nebraska Subclass. Any person or business entity located in Nebraska who purchased a Siemens AFCI breaker.

New Hampshire Subclass. Any person or business entity located in New Hampshire who purchased a Siemens AFCI breaker.

North Carolina Subclass. Any person or business entity located in North Carolina who purchased a Siemens AFCI breaker.

Oregon Subclass. Any person or business entity located in Oregon who purchased a Siemens AFCI breaker.

Pennsylvania Subclass. Any person or business entity located in Pennsylvania who purchased a Siemens AFCI breaker.

Texas Subclass. Any person or business entity located in Texas who purchased a Siemens AFCI breaker.

Wisconsin Subclass. Any person or business entity located in Wisconsin who purchased a Siemens AFCI breaker.

177. Plaintiffs reserve the right to modify the class definition or to add additional sub-classes.

178. **Numerosity.** Consistent with Rule 23(a)(1), both Classes are so numerous and geographically dispersed that joinder of all Class members is impracticable. Plaintiffs believe that there are tens of thousands, if not more, members of both the Consumer Class and Commercial Class. Class members may

be notified of the pendency of this action by recognized, Court-approved notice dissemination methods, which may include U.S. mail, electronic mail, internet postings, and/or published notice.

179. **Commonality and Predominance.** Consistent with Fed. R. Civ. P. 23(a)(2) and with 23(b)(3)'s predominance requirement, this action involves common question of law and fact that predominate over any questions affecting individual Class members. These common questions include, but are not limited to:

a. Whether Siemens' AFCI breakers contain an inherent or manufactured defect that causes them to unnecessarily trip in the presence of harmless electrical arcs;

b. Whether Siemens misled consumers, homebuilders, and electricians or omitted information about the ability of its AFCI breakers to function properly and trip only in the presence of dangerous arcs;

c. Whether consumers were harmed when they purchased defective Siemens' AFCI breakers that frequently and unnecessarily tripped;

d. Whether electricians and home builders were harmed when they incurred costs and lost time investigating the cause of and

attempting to resolve nuisance tripping of Siemens' defective AFCI breakers;

e. Whether Siemens defective AFCI breakers violated its implied warranty of merchantability;

f. Whether Siemens was unjustly enriched or otherwise improperly benefited by selling defective AFCI breakers that did not function as represented; and,

g. Whether the Consumer Class and Commercial Class are entitled to damages or other relief.

180. **Typicality**. Consistent with Fed. R. Civ. P. 23(a)(3), KB Electric, Bolt Electric, Electricalifornia, and Zank Electric are typical of members of the Commercial Class and Vodicka, Cates, Butakis, Keyser, Barrette, Oakley, and Wylie are typical of members of the Consumer Class. KB Electric, Bolt Electric, Electricalifornia, and Zank Electric, are commercial entities that purchased and installed Siemens' AFCI breakers and lost time and money, including the cost of defective Siemens' breakers, and uncompensated time investigating nuisance tripping of Siemens' breakers that it ultimately had to replace. Vodicka, Cates, Butakis, Keyser, Barrette, Oakley, and Wylie each owned Siemens' AFCI breakers that were defective and experienced nuisance tripping even when no arcing existed in the circuits. Plaintiffs KB Electric, Bolt Electric, Electricalifornia, and Zank

Electric suffered injuries similar to those suffered by other members of the Commercial Class and Vodicka, Cates, Butakis, Keyser, Barrette, Oakley, and Wylie suffered injuries akin to those of the Consumer Class. Plaintiffs seeks relief consistent with the relief owing to both Classes.

181. **Adequacy**. Consistent with Fed. R. Civ. P. 23(a)(4), Plaintiffs are adequate representatives of the Class because Plaintiffs KB Electric, Bolt Electric, Electricalifornia, and Zank Electric are members of the Commercial Class and Plaintiffs Vodicka, Cates, Butakis, Keyser, Barrette, Oakley, and Wylie are members of the Consumer Class and all are committed to pursuing this matter to obtain relief for themselves and for both proposed Classes. Plaintiffs have no conflict of interest with the Class. Plaintiffs also retained counsel competent and experienced in complex class action litigation. Plaintiffs intend to vigorously prosecute this case and will fairly and adequately protect the Class's interests.

182. **Superiority**. Consistent with Fed. R. Civ. P 23(b)(3), class action litigation is superior to any other available means for the fair and efficient adjudication of this controversy, and no unusual difficulties are likely to be encountered in the management of this class action. The quintessential purpose of the class action mechanism is to permit litigation against wrongdoers even when damages to individual plaintiff may not be sufficient to justify individual litigation. Here, the damages suffered by Plaintiffs and the Class may be relatively small

compared to the burden and expense required to individually litigate their claims against Defendant, and thus, individual litigation to redress Defendant's wrongful conduct would be impracticable. Individual litigation by each Class member would also strain the court system, create the potential for inconsistent or contradictory judgments, and increase the delay and expense to all parties and the court system. By contrast, the class action device presents far fewer management difficulties and provides the benefits of a single adjudication, economies of scale, and comprehensive supervision by a single court.

CLAIMS

COUNT I

Fraudulent Concealment

(Under Georgia law and on behalf of the Consumer Class and the Commercial Class)

183. Plaintiffs reallege the foregoing paragraphs as if fully set forth herein.

184. Siemens fraudulently concealed the defects in its AFCI breakers.

185. Siemens knew its AFCI breakers were defective because of, among other things, the numerous public complaints it received claiming that its AFCI breakers were suffering from repeated and unexplained nuisance tripping and its own research and testing of AFCI breakers returned as defective. NEMA identified nuisance tripping as a potential problem for AFCI breakers. Subsequently,

electricians, homebuilders, and consumers, both publicly and to Siemens directly, notified Siemens that its AFCI breakers were suffering from nuisance tripping.

186. Siemens had a duty to disclose any defect in its AFCI breakers. Siemens knew of the harm created by defective breakers that suffered repeated nuisance tripping. Indeed, in its troubleshooting guide, Siemens writes that "[d]etermining the cause of an AFCI trip can be confusing and time-consuming." Thus, Siemens knew that, should it make available for purchase defective AFCI breakers that frequently and unnecessarily trip, Plaintiffs would suffer harm.

187. Siemens, however, concealed defects in its AFCI breakers that caused the breakers to trip in the presence of harmless arcs and suffer from nuisance tripping. Siemens represented that its products "have been thoroughly tested to dramatically decrease the amount of nuisance tripping." It, furthermore, represents that its AFCI breakers will function properly to "mitigate the effects of arcing faults by functioning to de-energize a circuit when an arc-fault is detected."

188. When Siemens' AFCI breakers trip unexpectedly and unnecessarily, Siemens puts the blame on homeowners and electricians. Siemens issued a "troubleshooting" guide for homeowners and electricians that supposedly explained the causes of a tripped breaker. However, the guide only lists potential causes of nuisance tripping that blame the homeowner or electrician. Siemens never states

that the problem may be a defect in the AFCI breaker that causes it to unnecessarily trip in the presence of harmless arcs.

189. Similarly, Siemens placed an "indicator" on its AFCI breakers and provides an Intelli-Arc Diagnostic tool, both of which conceal the fact that the nuisance tripping is due to defects in the breaker itself.

190. The troubleshooting guide, the LED indicator, and the Intelli-Arc Diagnostic Tool therefore seek to deflect blame for the nuisance tripping and create the impression that any such tripping is caused by the actions taken by homeowners and electricians. Through these tools and its representations that its AFCI breakers are "thoroughly tested" and "dramatically decrease the amount of nuisance tripping", the public, including homeowners and electricians alike, are led to believe that any nuisance tripping is due to some other cause, not due to Siemens' breakers.

191. The defects Siemens concealed were material. Plaintiffs would not have purchased AFCI breakers that, like Siemens' AFCIs, failed to perform their essential purpose and caused them to repeatedly and unnecessary trip even when no dangerous arcing was occurring in the circuit.

192. Plaintiffs were not on actual or constructive notice of the defect, in part, because of Siemens' representations that any nuisance tripping is not due to its breakers, but incorrectly due to the fault of the homeowner or electrician.

193. Siemens' fraudulent concealment of defects in its AFCI breakers caused Plaintiffs' injuries. Plaintiffs purchased Siemens' AFCI breakers and paid a premium for Siemens' AFCI breaker because Siemens represented the AFCI breaker could perform functions that the breaker did not perform and that, any nuisance tripping of the breaker was not due to any defect. Plaintiffs lost the value of the AFCI breaker when they suffered from frequent, and unnecessary nuisance tripping. The Commercial Plaintiffs also suffered harm investigating the potential causes of nuisance tripping when, in reality, the issue was Siemens' defective AFCI breaker.

194. Plaintiffs, therefore, seek all remedies available to them for Siemens' fraudulent concealment.

COUNT II

Breach of the Implied Warranty of Merchantability

(On Behalf of Plaintiffs KB Electric, Bolt Electric, Butakis, Keyser, Barrette, and Jason Wylie and the Proposed Maine, Nebraska, New Hampshire, Pennsylvania, and Texas Subclasses)

195. Plaintiffs reallege the foregoing paragraphs as if fully set forth herein.

196. Siemens' AFCI breakers are subject to an implied warranty of merchantability, as defined in U.C.C. § 2-314. Maine, Nebraska, New Hampshire, Pennsylvania and Texas, where the relevant Plaintiffs and Subclass members reside, have adopted the UCC.

197. "[A] warranty that the goods shall be merchantable is implied in a contract for their sale if the seller is a merchant with respect to goods of that kind." *Id.* at § 2-314(1).

198. To be "merchantable," goods must be "in the case of fungible goods, are of fair average quality within the description[,]" "fit for their ordinary purposes for which such goods are used[,]" "run, within the variations permitted by the agreement, of any kind, quality, and quantity within each unit and among all units involved[,]" and "conform to the promises or affirmations of fact made on the container or label if any" *Id.* at § 2-314(2)(a), (b), (d), (f).

199. As described herein, the Siemens' AFCI breakers sold to Plaintiffs and members of the Class were not of average quality, were not fit for their ordinary purpose, were not within the variations of quality permitted, and did not conform to Siemens' representations.

200. Siemens represented that its AFCI breakers were fit for use in residential homes. To be fit for residential use, AFCI breakers must be capable of distinguishing between harmless electrical arcs, which commonly occur in residential areas, and dangerous electrical arcs which pose a risk of an electrical fire or injury. Properly functioning AFCI breakers should identify and trip only upon detecting a dangerous electrical arc.

201. Siemens' AFCI breakers, however, tripped in the presence of harmless arcs that commonly occur in residences and do not present a danger of a fire. As a result, Siemens' AFCI breakers are effectively unusable in residential panel boxes because they will frequently and needless trip, rending the outlets and appliances connected in the breaker's circuit unable to be used.

202. Plaintiffs have found the only solution to the needless tripping is to replace the defective Siemens' AFCI breakers.

203. Siemens' AFCI breakers, therefore, do not perform the function Siemens represented and that an AFCI breaker is intended and required to perform.

204. Siemens' breach of its implied warranties of merchantability injured Plaintiffs and members of the Commercial Class and Consumers Class.

COUNT III

Breach of Implied Warranty Pursuant to the Song-Beverly Act

(Plaintiffs Electricalifornia and Patrick Cates on behalf of the California Subclass)

205. Plaintiffs reallege all foregoing paragraphs as though fully set forth herein.

206. At all relevant times, Siemens was the manufacturer, distributor, warrantor and/or seller of the AFCIs. Siemens knew or should have known of the specific use for which the ACFIs were purchased.

207. Siemens provided Plaintiffs Electricalifornia and Cates and the California Subclass members with an implied warranty that the AFCIs, and any parts thereof, are merchantable and fit for the ordinary purposes for which they were sold.

208. The AFCIs, however, are not fit for their ordinary purpose because, inter alia, they suffer from an inherent defect at the time of sale that causes the AFCIs to suffer from excessive nuisance tripping. As such, the AFCIs were incapable of being used for their intended purpose.

209. Siemens impliedly warranted that the AFCIs were of merchantable quality and fit for such use. This implied warranty included, inter alia, a warranty that the AFCIs were manufactured, supplied, distributed, and/or sold by Siemens were reliable for use as breakers and would not prematurely fail.

COUNT IV

Violation of California's Consumer Legal Remedies Act, Cal. Civ. Code § 1750, *et seq.*

(Plaintiffs Electricalifornia and Patrick Cates on behalf of the California Subclass)

210. Plaintiffs reallege all foregoing paragraphs as though fully set forth herein.

211. California Consumers Legal Remedies Act ("CLRA") declares unlawful "methods of competition and unfair or deceptive acts or practices

undertaken by any person in a transaction intended to result or which results in the sale or lease of goods or services to any consumer." Cal. Civ. Code § 1770.

212. The CLRA defines the following acts as unlawful methods of competition:

> (5) "Represent[] that goods or services have sponsorship, approval, characteristics, ingredients, uses benefits, or quantities that they do not have . . .", *id*. at § 1770(a)(5).
>
> (7)"Representing that goods or services are of a particular standard, quality, or grade, or that goods are of a particular style or model, if they are of another" *id*. at § 1770(a)(7);

213. Plaintiffs and the other Class members are "consumers" within the meaning of Cal. Civ. Code § 1761(d).

214. Siemens committed unfair or deceptive acts or practices. Specifically, Siemens acted unfairly and deceptively by making available for sale AFCI breakers that could not perform the basic and required function of AFCI breakers. While properly functioning AFCI breakers should only trip in the presence of potentially dangerous electrical arcs, defective Siemens breakers trip in the presence of routine, expected, and harmless arcs. When Siemens' AFCIs improperly trip, they render the circuit, and anything plugged into the circuit, unusable. As a result, Siemens' AFCI breakers do not perform the function for which Siemens advertises and promotes its AFCI breakers.

215. At best, defective Siemens' AFCI breakers are only capable of adequately performing the functions of standard circuit breakers—acting as a switch and tripping in the presence of unsafe current levels. Standard circuit breakers, however, are significantly cheaper than AFCI breakers.

216. At worst, defective Siemens' AFCI breakers have no value because they cannot be used without frequent and unnecessary nuisance tripping. Even brand-new Siemens' AFCI breakers will need to be replaced.

217. Siemens, however, advertises and sells its AFCI breakers as if they are properly functioning and charges consumers a premium to purchase its AFCI breakers. Even though Siemens is aware that its AFCI breakers are defective, it does not disclose this fact to purchasers of its products.

218. Siemens was under a duty to Plaintiffs and the California Subclass members to disclose the defective nature of the AFCIs and/or the associated repair or replacement costs because: (i) Siemens was in a superior position to know the true state of facts about the defective nature of the AFCIs; (ii) Plaintiffs and the Subclass members could not reasonably have been expected to learn or discover that their AFCIs were defective until they experienced excessive nuisance tripping; and (iii) Siemens knew that Plaintiffs the Subclass members could not reasonably have been expected to learn or discover the AFCI defect.

219. By failing to disclose and concealing the defective nature of the AFCIs from Plaintiffs Electricalifornia and Cates and prospective California Subclass members, Siemens violated California Civil Code § 1770(a), as it represented that the AFCIs had characteristics and benefits that they do not have, and represented that the breakers were of a particular standard, quality, or grade when they were of another. Cal. Civ. Code §§ 1770(a)(5), (7).

220. Plaintiffs have been harmed by Siemens' violation of the CLRA. Plaintiffs have purchased Siemens AFCI breakers were defective and exhibited frequent nuisance tripping. Plaintiffs resolved the nuisance tripping by replacing the Siemens AFCI breaker with a new AFCI breaker. Plaintiffs suffered additional harm due to uncompensated time and expenses spent investigating the potential causes of the nuisance tripping, only to discover the cause was Siemens' defective breaker.

221. Had Plaintiffs known that Siemens' AFCI breakers were defective and could not function as promised, Plaintiffs would have purchased a competitor's AFCI breaker instead, or paid less for the Siemens' AFCI breakers. Plaintiffs were injured when they purchased Siemens' AFCI breakers because they paid a premium for Siemens' AFCI breaker because Siemens represented the AFCI breaker could perform functions that the breaker did not perform, and because Plaintiffs lost the value of the AFCI breaker when they suffered from frequent, and unnecessary nuisance tripping.

222. In accordance with § 1782(a) of the CLRA, on April 13, 2021 and on May 11, 2022, Plaintiffs served Siemens' counsel with notice of its alleged violations of the CLRA. Siemens has not met the demands of Plaintiffs' letter, thus. Plaintiffs seek actual damages, punitive damages, attorney's fees and costs, and any other relief the Court deems proper under Cal. Civ. Code § 1780(a)(5).

COUNT V

Violation of California Bus. & Prof. Code § 17200, *et seq.*

(Plaintiffs Electricalifornia and Patrick Cates on behalf of the California Subclass)

223. Plaintiffs reallege all foregoing paragraphs as though fully set forth herein.

224. California's UCL makes unlawful for any person to commit an act of "unfair competition", including "any unlawful unfair or fraudulent business act or practice and unfair, deceptive, untrue or misleading advertising . . . ." Cal. Civ. Code § 72000. "[U]nfair competition" is interpreted broadly to include acts that violate other laws and may include acts event if not specifically proscribed by some other law.

225. Siemens violated the UCL by engaging in conduct that constituted "unlawful . . . business practices", "unfair fraudulent business practices" and "unfair, deceptive or misleading advertising." Id. at § 17200.

226. Specifically, Siemens acted unfairly and deceptively by making available for sale AFCI breakers that could not perform the basic and required function of AFCI breakers. While properly functioning AFCI breakers should only trip in the presence of potentially dangerous electrical arcs, defective Siemens' breakers trip in the presence of routine, expected, and harmless arcs. As a result, Siemens' AFCI breakers do not perform the function for which Siemens advertises and promotes its AFCI breakers.

227. At best, defective Siemens' AFCI breakers are only capable of adequately performing the functions of standard circuit breakers—acting as a switch and tripping in the presence of unsafe current levels. Standard circuit breakers, however, are significantly cheaper than AFCI breakers.

228. At worst, defective Siemens' AFCI breakers have no value because they cannot be used without frequent and unnecessary nuisance tripping. Even brand-new Siemens' AFCI breakers will need to be replaced.

229. Siemens, however, advertises and sells its AFCI breakers as if they are properly functioning and charges consumers a premium to purchase its AFCI breakers. Even though Siemens is aware that its AFCI breakers are defective, it does not disclose this fact to purchasers of its products.

230. Defendant was under a duty to Plaintiff Electricalifornia and Cates and the California Subclass members to disclose the defective nature of the AFCIs: (i)

Defendant was in a superior position to know the true state of facts about the defective AFCIs; (ii) Defendant made partial disclosures about the quality of the AFCIs without revealing the defective nature of them; (iii) Defendant actively concealed the defective nature of the AFCIs from Plaintiffs and the California Subclass.

231. Plaintiffs have been harmed by Siemens' violation of the UCL. Plaintiffs have purchased Siemens AFCI breakers were defective and exhibited frequent nuisance tripping. Plaintiffs only means of resolving the nuisance tripping was to replace the Siemens AFCI breaker with a new one. Plaintiff Electricalifornia, additionally, suffered harm due to uncompensated time and expenses spent investigating the potential causes of the nuisance tripping, only to discover the cause was Siemens' defective breaker.

232. Had Plaintiffs known that Siemens' AFCI breakers were defective and could not function as promised, Plaintiffs would have purchased a competitor's AFCI breaker instead, or paid less for the Siemens' AFCI breakers. Plaintiffs were injured when they purchased Siemens' AFCI breakers because they paid a premium for Siemens' AFCI breaker because Siemens represented the AFCI breaker could perform functions that the breaker did not perform, and because Plaintiffs lost the value of the AFCI breaker when they suffered from frequent, and unnecessary nuisance tripping.

233. Plaintiffs pursue all remedies available under the UCL, including injunctive relief and restitution damages, and any other relief the Court deems proper.

COUNT VI

Violation of the Texas Deceptive Trade Practices Act, Tex. Bus. & Comm. Code § 17.46

(Plaintiff Jason Wylie on behalf of the Texas Subclass)

234. Plaintiffs reallege all foregoing paragraphs as though fully set forth herein.

235. Plaintiff Wylie, the Texas Class members, and Defendant are persons within the meaning of Tex. Bus. & Comm. Code § 17.45.

236. The Texas Deceptive Trade Practices Act ("TDTPA") prohibits the use of "[f]alse, misleading, or deceptive acts or practices in the conduct of any trade or commerce[.]" Tex. Bus. & Comm. Code § 17.45(a). The Act prohibits, among other things: "failing to disclose information concerning goods or services which was known at the time of the transaction if such failure to disclose such information was intended to induce the consumer into a transaction into which the consumer would not have entered had the information been disclosed." *Id.* at § 17.46(b)(24).

237. Under the TDTPA, a "goods" mean "tangible chattels or real property purchased or leased for use." *Id.* at § 17.45(1).

238. Under the TDTPA, "Person" means an individual, partnership, corporation, association, or other group, however organized.

239. Under the TDTPA, a "Consumer" is "an individual, partnership, corporation, . . . who seeks or acquires by purchase or lease, any goods or services[.]"

240. Siemens AFCIs are a "good" under the act because it is chattels that are purchased or leased. Plaintiff and the Subclass are "consumers" under the Act because they purchased the Siemens AFCIs for household use.

241. Siemens violated the TDTPA by "failing to disclose information concerning goods or services which was known at the time of the transaction." Specifically, Siemens knew that AFCIs should not be nuisance tripping and, to function as expected and required, should only trip in the present of a dangerous arc.

242. Siemens, however, sold AFCIs it knew were not up to the standard, quality, or grade Siemens represented them to be.

243. Siemens marketed and sold AFCI breakers that could not perform the basic and required function of AFCI breakers. While properly functioning AFCI breakers should only trip in the presence of potentially dangerous electrical arcs, defective Siemens' breakers trip in the presence of routine, expected, and harmless arcs. As a result, Siemens' AFCI breakers do not perform the function for which Siemens advertises and promotes them.

244. At best, defective Siemens' AFCI breakers were only capable of adequately performing the functions of standard circuit breakers—acting as a switch and tripping in the presence of unsafe current levels. Standard circuit breakers, however, are significantly cheaper than AFCI breakers.

245. At worst, defective Siemens' AFCI breakers had no value because they could not be used without frequent and unnecessary nuisance tripping.

246. Siemens marketed and sold its AFCI breakers as if they were properly functioning and charged consumers a premium to purchase its AFCI breakers. Even though Siemens was aware that its AFCI breakers were defective, it did not disclose this fact to purchasers of its products.

247. Plaintiff Wylie and the Texas Subclass suffered ascertainable loss as a direct and proximate result of Siemens' deceptive omissions.

248. As a result, and as a result of the misconduct otherwise described herein, Plaintiff Wylie suffered economic injury.

249. As permitted under Texas law, Plaintiff Wylie and the Texas Subclass seek trebled damages, appropriate injunctive relief, and reasonable attorney's fees.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs, individually and on behalf of the Class, prays for the following relief:

a. For an Order certifying the Classes as defined above, appointing Plaintiffs as Class representative, and appointing Plaintiffs' counsel as Class counsel;

b. For an award of all recoverable compensatory, statutory, and other damages sustained by Plaintiffs and Class Members,

c. For equitable relief including disgorgement, unjust enrichment, and all other available relief under applicable law;

d. For reasonable attorneys' fees and expenses as permitted by applicable law;

e. For pre- and post-judgment interest as allowed by law; and,

f. Such further relief at law or in equity that this Court deems just and proper.

Dated: May 12, 2025

/s/ Brian C. Gudmundson

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