

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Complaint of Michael Mabee)	
Related to Critical Infrastructure)	Docket No. EL20-21-000
Reliability Standard)	

Motion of Complainant Requesting FERC Take Official Notice

Submitted to FERC on March 28, 2020

I am a private citizen who conducts public interest research on the security of the electric grid. I am also the Complainant in this docket.

I request that the Commission take official notice of two reports published on March 8, 2020¹ and March 23, 2020² in the Wall Street Journal. Copies of these reports are attached as Exhibit A and Exhibit B.

As we have learned from the case of Hurricane Maria, poor maintenance can substantially contribute to the collapse of the electric grid in the case of extreme weather.³ Similarly, the poor maintenance of transmission assets, reported in the Wall Street Journal article, could exacerbate the impact of a coordinated terrorist attack against the bulk power system.

Presently, these transmission lines do not fall under the physical security standard (CIP-14-2) but to protect the bulk power system it is clear these transmission lines are vital. The Commission should take official notice of the facts uncovered in the Wall Street Journal report as they could impact the effect of a physical attack on the bulk power system and as further evidence that transmission lines should be covered under CIP-14-2.

Respectfully submitted,



Michael Mabee

¹ Gold, Russell and Blunt, Katherine. Wall Street Journal. "This Old Metal Hook Could Determine Whether PG&E Committed a Crime." March 8, 2020. <https://www.wsj.com/articles/this-old-metal-hook-could-determine-whether-pg-e-committed-a-crime-11583623059> (accessed March 28, 2020)

² Blunt, Katherine. Wall Street Journal. "PG&E to Plead Guilty to Involuntary Manslaughter Charges in Deadly California Wildfire." March 23, 2020. <https://www.wsj.com/articles/pg-e-to-plead-guilty-to-involuntary-manslaughter-charges-in-deadly-california-wildfire-11584962649> (accessed March 28, 2020)

³ Dooley, Erin. ABC News. "Puerto Rico warned power grid 'literally falling apart' before Maria hit." October 18, 2017. <https://abcnews.go.com/US/puerto-rico-warned-power-grid-literally-falling-maria/story?id=50560446> (Accessed March 28, 2020).

Exhibit A
To March 28, 2020 Filing In
Docket No. EL20-21-0000
Submitted by Michael Mabee

BUSINESS

This Old Metal Hook Could Determine Whether PG&E Committed a Crime

A worn, century-old hook broke and helped spark California's deadliest wildfire; the utility's care of such parts is key in a criminal probe



An undated photo provided by PG&E shows a broken C-hook believed to have failed at the transmission tower identified as the origin of the deadly 2018 Camp Fire in Northern California.

PHOTO: PACIFIC GAS & ELECTRIC/ASSOCIATED PRESS

By Russell Gold and Katherine Blunt

March 8, 2020 5:30 am ET

A 3-inch hook purchased for 56 cents around the end of World War I could help determine whether PG&E Corp. [PCG +4.69% ▲](#) faces criminal charges for starting the deadliest wildfire in California history.

Known as a "C-hook," the badly worn piece of metal broke on Nov. 8, 2018, dropping a

high-voltage electric line that sparked the Camp Fire, destroying the town of Paradise and killing 85 people.

PG&E has hundreds of thousands of hooks, manufactured by a number of companies, holding up power lines in its 70,000 square-mile-territory, but the utility doesn't have good data on how old they are, and is trying to replace many of them.

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Whether PG&E was negligent in inspecting and replacing these hooks has emerged as a key factor in a continuing California investigation that could determine whether the company and some of its former executives face criminal charges for their role in wildfires.

“They’re excellent hooks if you don’t leave them up in towers for 100 years,” said Mike Ramsey, the district attorney of California’s Butte County who is leading the investigation along with the state attorney general’s office.

Mr. Ramsey’s office sent pieces of the broken hook to the Federal Bureau of Investigation’s laboratory in Quantico, Va., for forensic examination. He said he expects to make a decision soon on whether to charge PG&E, individuals at the company, or both.



The broken hook was still attached to the insulators.

The issue also has caught the attention of a federal judge overseeing PG&E's criminal probation from a safety-related violation stemming from a 2010 natural gas explosion. The judge is now demanding that the company produce more information on what it knows about the hooks and when it learned it.

U.S. District Judge William Alsup has asked PG&E dozens of questions about its hooks and inspection practices, and expressed concern that the company still wasn't doing enough to catch problems.

"You always fall back on: 'We do inspections, we do inspections.' But the inspections aren't working," he told the company in court.

A PG&E lawyer told Judge Alsup that since the Camp Fire, the company has replaced thousands of hooks, some of which had significant wear. The company says an untold number of worn hooks remain in use.

PG&E said in a statement its inspections have uncovered the need to replace thousands of hooks and other hardware showing wear or corrosion, and that all of the highest-priority problems have been addressed.

The hooks, about the width of a fist, hang from the steel towers that support transmission lines, helping to hold the charged wires. Windy conditions, over decades, can cause the hooks to rub against their hangers, which can erode the metal and increase the odds of failure. State investigators said they believed about 75% to 80% of the hook that caused the Camp Fire had worn away before it broke.



A C-hook from a PG&E transmission line. This photo from court papers was meant to show how C-hooks could be worn down over decades as they rub against their hangers.

PHOTO: PACIFIC GAS & ELECTRIC/ASSOCIATED PRESS

PG&E has a poor record of maintaining its transmission lines and steel towers, a Wall Street Journal investigation last year found.

PG&E internal documents show that it knew for years that many of its transmission towers had reached the end of their useful lives, the Journal disclosed last year. In a 2017 internal presentation, the utility estimated that its transmission towers were an average of 68 years old. Their mean life expectancy was 65 years. The oldest steel towers were 108 years old.

Plagued by shoddy records and aging equipment, the company struggled to respond this past decade as drought and climate change made a tinderbox of its service territory and exposed the dangers of its power grid. Its equipment sparked 18 deadly wildfires in 2017 and 2018, killing more than 100 people, state investigators say.

The company has agreed to a settlement with state regulators probing the cause of the Camp Fire after they found systemic problems with its inspection and maintenance practices.

The hook that failed in November 2018 was manufactured by the Ohio Brass Co., a company that originally made metal harnesses for horse-drawn buggies before

developing hardware for some of the first transmission lines ever built, according to court filings, historical documents and Mr. Ramsey.

A spokesman for Hubbell Inc., which purchased Ohio Brass in 1978, said the company was “unable to identify the manufacturer of the hook in question.”



In a 2017 internal presentation, PG&E estimated that its transmission towers were an average of 68 years old. Their mean life expectancy was 65 years, while their oldest steel towers were more than a century old.

PHOTO: NATHAN WEYLAND FOR THE WALL STREET JOURNAL

Photographs of hooks removed from the tower on the transmission line where the fire started show Ohio Brass markings. Ohio Brass catalogs from that period reviewed by the Journal don’t describe any warranties, and there is no evidence that metal hooks manufactured around 1918 were expected to last a century.

“I can tell you positively they had no idea” how long they would last, said Doru Stefanescu, a professor emeritus of materials science at Ohio State University who is an expert in the kind of malleable iron used to make the hooks. Even today, he said, “we don’t have data to tell you what happens over 100 years.”



Court papers filed by attorneys representing fire victims suing PG&E for damages describe the hooks as “all worn, rusted, and degraded.” PG&E inspectors, two months after the fire, noted in an inspection that a hook on the tower where the fire started “is rusty and corrosion is set on.”

The line that sparked the Camp Fire, the Caribou-Palermo, is part of a transmission network known as the Caribou-Valona system, built around 1921 to carry hydroelectric power from the Sierra Nevada mountains to the Bay Area. Hundreds of its original steel towers are still in use.

PG&E has said in recent court filings it didn’t track when its hooks were installed or how long they had been exposed to weather. It also didn’t routinely inspect them to look for corrosion or wear. Before the Camp Fire, PG&E inspection forms didn’t even include space to note the condition of hooks and other hardware.

There were reasons to be concerned about the condition of these hooks, records show.

In 1924, Ohio Brass stopped selling the type of malleable iron hooks that design documents indicate were used on the Caribou-Palermo just a few years earlier. Ohio Brass, switched to a new manufacturing method that produced iron “freed from all tendency toward embrittlement when hot-dip galvanized,” according to an article in the March 1926 edition of the Journal of the American Institute of Electrical Engineers.

In 1987, PG&E engineers noticed worn hooks on the southern portion of the 1921 transmission system. They requested tests on two hooks, which were supposed to hold

up to 30,000 pounds. Both failed at 11,500 pounds. They then tested a third hook that didn't have any signs of wear. It failed at 6,900 pounds. One of the hooks was made by Ohio Brass while another was made by a different company, Lindsey Manufacturing Co., according to PG&E records.

The report concluded that PG&E should test more hooks to determine whether they were still dependable. In December, PG&E said in court filings it couldn't find any records related to further testing.

PG&E didn't routinely climb its transmission towers before the Camp Fire, instead inspecting them by ground or by air every five years. Since the Camp Fire, PG&E has rushed to inspect its entire electrical grid in search of other potentially dangerous problems. Inspectors last year spotted more than 5,000 high-priority safety hazards that hadn't been previously discovered.

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Judge Alsup recently questioned PG&E's new inspection procedures after an expert hired by victims' attorneys testified that he spotted a worn hook on the Cresta-Rio Oso transmission line, which was built parallel to the Caribou-Palermo around 1928. The hook was a couple of hundred feet from the tower where the Camp Fire started.

Scott Hylton, a former Sacramento utility lineman, testified that after he first spotted the hook in the weeks following the fire, he assumed PG&E workers would replace it during inspections. When it was still there a year later, "I felt an obligation to bring it forward to make sure it wasn't missed," he said.

PG&E inspectors had examined this tower twice last year, once by climbing it and once by drone. In court filings, the company said inspectors failed to spot the hook damage based on the photos they took. After looking again, they determined the hook was about 30% worn. PG&E's guidelines require it to replace hooks with 30% to 50% wear within a year—or within six months if they are in fire-prone areas.

“If I had C-hooks that were 30% worn out, I'd replace them,” Mr. Hylton said in court.

—*Erin Ailworth contributed to this article.*

Write to Russell Gold at russell.gold@wsj.com and Katherine Blunt at Katherine.Blunt@wsj.com

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Exhibit B
To March 28, 2020 Filing In
Docket No. EL20-21-0000
Submitted by Michael Mabee

BUSINESS

PG&E to Plead Guilty to Involuntary Manslaughter Charges in Deadly California Wildfire

Company discloses criminal charges related to its role in sparking 2018 Camp Fire that destroyed town of Paradise, Calif.



Paradise, Calif., was devastated by a wildfire in 2018.

PHOTO: NOAH BERGER/ASSOCIATED PRESS

By Katherine Blunt

Updated March 23, 2020 9:11 am ET

PG&E Corp. [PCG 16.14% ▲](#) has agreed to plead guilty to felony involuntary manslaughter charges for its role in starting the deadliest wildfire in California's history.

The indictment in Butte County, where 85 people died during the 2018 Camp Fire, charges the company with 84 counts of manslaughter and one count of unlawfully

causing a fire. The company has agreed to pay a \$3.48 million penalty, the statutory maximum.

The company disclosed the charges Monday morning in a regulatory filing. It filed for chapter 11 protection last year, citing billions of dollars in liability costs it faces because of its role in sparking wildfires in 2017 and 2018 that collectively killed more than 100 people and destroyed roughly 15,700 homes.

The grand jury's indictment caps a yearlong criminal investigation led by Butte County District Attorney Mike Ramsey, with assistance from the office of California Attorney General Xavier Becerra. It examined the role PG&E's power lines played in sparking the Camp Fire, which destroyed the town of Paradise.

"PG&E acted with criminal negligence, which is a much higher standard than ordinary negligence," Mr. Ramsey said. "They acted in a way that created a high risk of death."



A woman visited a memorial in 2019 for Camp Fire victims in Paradise, Calif.

PHOTO: NOAH BERGER/ASSOCIATED PRESS

PG&E said in a statement that it hoped that by accepting a plea, both the company and community could focus on rebuilding. "We cannot replace all that the fire destroyed, but our hope is that this plea agreement, along with our rebuilding efforts, will help the community move forward from this tragic incident," the company said.

California fire investigators previously determined the fire started after a worn piece of metal known as a “C-hook” broke free from a transmission tower, releasing a high-voltage power line that sparked and ignited the brush below. Much of the criminal probe centered on the hook. Fire investigators found it had worn through by as much as 80% before it snapped. The investigation produced more than 90 witnesses and nearly 1,500 exhibits detailing the circumstances that led to the fire, Mr. Ramsey said.

State fire investigators had previously determined that 85 people died in the blaze, but the grand jury concluded that one person died by suicide as the fire approached, resulting in the 84 manslaughter counts. The charge for unlawfully causing a fire includes special allegations of causing bodily injury to a firefighter, causing bodily injury to other individuals and causing extensive property damage.

In addition to the \$3.48 million penalty, PG&E is expected to agree to pay \$500,000 to cover certain investigation costs and up to \$15 million for a water delivery system near Paradise. The fire destroyed a canal that served as one of Butte County’s key water sources.

Mr. Ramsey said he considered pursuing charges against individual employees within PG&E, but the investigation showed that the company’s maintenance problems resulted from decisions made collectively by numerous people.

It is unusual for major corporations to face homicide charges. Such charges typically require prosecutors to prove knowledge of risk or intent of misconduct among individuals within the company, legal experts say.

“Criminal charges against a corporation are rare, and manslaughter charges are especially rare,” said Will Thomas, a business law professor at University of Michigan. “It’s an indication of just how bad some of PG&E’s activities have been.”

In 1978, an Indiana grand jury indicted Ford Motor Co. on three counts of reckless homicide after a Ford Pinto exploded during a crash, killing its three occupants. Investigators discovered serious defects in the design of the Pinto’s fuel tank. A jury later acquitted Ford of the homicide charges.

After the 2010 Deepwater Horizon disaster that killed 11 drilling rig workers and released an oil spill in the Gulf of Mexico, BP PLC pleaded guilty to 11 felony counts of “seaman’s manslaughter,” admitting that its workers had been negligent. Two of its employees faced similar charges that were eventually dropped.

PG&E has struggled to respond over the past decade as drought and climate change made a tinderbox of its service territory and exposed the dangers of its aging power grid. The company is trying to replace much of its equipment after inspections last year revealed thousands of safety hazards throughout its 70,000 square-mile territory.

Internal documents show that PG&E knew for years that many of its high-voltage transmission towers had reached the end of their useful lives, an investigation by The Wall Street Journal disclosed last year. In a 2017 internal presentation, the utility estimated its transmission towers were an average of 68 years old. Their mean life expectancy was 65 years. The oldest steel towers were 108 years old.

PG&E was convicted in 2016 on federal felony charges related to its neglect of a natural gas pipeline that exploded in 2010 in San Bruno, Calif., destroying a neighborhood and killing eight people. As part of its sentencing, the company was put on a five-year probation term overseen by U.S. District Judge William Alsup. Another felony conviction would likely put PG&E in violation of that probation.

A second felony conviction could also complicate PG&E’s emergence from chapter 11 protection, which it sought last January. PG&E has since agreed to settle claims from insurers, individual fire victims, cities and public agencies for more than \$25 billion.

Its restructuring plan involves raising billions of dollars in debt and equity to cover those claims, a prospect made more challenging by the recent stock-market plunge, according to people familiar with the matter. The company has been working to get court and regulatory approval of the plan before June 30, the deadline for its participation in a California wildfire fund meant to help the state’s utilities handle liability costs going forward.

Write to Katherine Blunt at Katherine.Blunt@wsj.com

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