IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

VALTRUS INNOVATIONS LTD., KEY PATENT INNOVATIONS LIMITED, Plaintiffs, v. GOOGLE LLC, Defendant.	Case No. 3:24-cv-03249-S JURY TRIAL DEMANDED

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Valtrus Innovations Ltd. ("Valtrus") and Key Patent Innovations Limited ("KPI" and, together with Valtrus, "Plaintiffs"), by and through their undersigned counsel, plead the following against Defendant Google LLC ("Google") and allege as follows:

THE PARTIES

1. Valtrus is the successor in interest to a substantial patent portfolio created by Hewlett Packard Enterprise and its predecessor companies, including Compaq, Verity, and Hewlett-Packard Development Company (collectively, "HPE"). Valtrus is an Irish entity duly organized and existing under the laws of the Republic of Ireland. The address of the registered office of Valtrus is: The Glasshouses GH2, 92 Georges Street Lower, Dun Laoghaire, Dublin A96 VR66, Ireland. HPE's worldwide corporate headquarters is located in Spring, Texas. One of HPE's primary US facilities is located in Frisco, Texas.

2. Valtrus is the assignee and owns all right and title to U.S. Patent No. 7,939,967.

3. KPI is the beneficiary of a trust pursuant to which Valtrus owns, holds, and asserts the '967 Patent. KPI is an Irish entity duly organized and existing under the laws of the Republic of Ireland. The address of the registered office of KPI is: The Glasshouses GH2, 92 Georges Street Lower, Dun Laoghaire, Dublin A96 VR66, Ireland.

4. On information and belief, Google is a limited liability company duly organized and existing under the laws of the State of Delaware, having a regular and established place of business in the Northern District of Texas, including at 3800 Railport Parkway, Midlothian, Texas 76065.

JURISDICTION AND VENUE

5. This is an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has personal jurisdiction over Google because Google creates products and services that are and have been used, offered for sale, sold, and purchased in the Northern District of Texas, and Google has committed, and continues to commit, acts of infringement in the Northern District of Texas, has conducted business in the Northern District of Texas, and has engaged in continuous and systematic activities in the Northern District of Texas.

7. Under 28 U.S.C. §§ 1391(b)-(d) and 1400(b), venue is proper in this judicial district because Google maintains a regular and established place of business in this district and has committed and regularly commits acts of infringement within this judicial district giving rise to this action. For example, Google operates a 260,000 square-foot data center in Midlothian, Texas. Plaintiffs are informed and believe that this data center includes the infringing systems and practices the infringing methods described herein. This data center is one of only fourteen in all of North America. Google is also developing a new 285,000 square-foot data center in Red Oak, Texas. Google states that it "work[s] with and employ[s] hundreds of local people and invest[s] in the initiatives that matter most to the community" in Ellis County, where these data centers are located. https://datacenters.google/locations/ellis-county-texas/ (last visited Mar. 27, 2025).

8. Google's infrastructure investments in Northern Texas have led to the launch of a Google Cloud region in Dallas, Texas, which is one of only eleven in North America. Google Cloud regions comprise infrastructure in data centers to support customer needs; Google Cloud customers can choose to run their applications on Google's computers in the Dallas-Fort Worth area for a variety of reasons, including reduced latency and carbon footprint. Google also maintains an office in the Dallas-Fort Worth area in Addison, Texas, and runs a content delivery network (CDN) node in the Dallas area. Google employees in the Dallas-Fort Worth area work on and are responsible for the subject matter of this patent suit. For example, upon information

and belief, Google works with and employs hundreds of people in Ellis County, Texas, to support its data center infrastructure, and employs people in the Dallas-Fort Worth area who oversee and work on Google Cloud database architecture and Google Cloud Platform.

9. Google also has significant operations in nearby cities, including Austin and Houston. For example, on information and belief, Google owns approximately 550,000 square feet of office space across three locations in downtown Austin, Texas. Google is also continuing to grow its presence in Texas. For example, on information and belief, Google is preparing to open an additional 750,000 square feet of offices in Austin at Block 185, a new office tower located at 601 West Second Street. Plaintiffs are informed and believe that these offices include employees responsible for the subject matter of this patent suit. For example, the Chief Technology Officer of Google Cloud works out of Google's Austin office. Furthermore, on information and belief, Google employees in Austin and Houston work on Google Cloud, finance, and engineering. On information and belief, Google employs more than 2,400 people in Texas across its offices and data centers.

THE ASSERTED PATENT

10. U.S. Patent No. 7,939,967 ("the '967 Patent"), entitled "Multiple Power Supply Control," was duly and lawfully issued on May 10, 2011. A true and correct copy of the '967 Patent is attached hereto as **Exhibit 1**. A true and correct copy of the '967 Patent's prosecution file history is attached hereto as **Exhibit 2**.

11. The '967 Patent names Daniel Humphrey (Houston, TX), Amin Bemat (Cypress, TX), and Reynaldo Domingo (Spring, TX) as co-inventors. The '967 Patent represents the work of these inventors at Hewlett-Packard Development Company, L.P. (Houston, TX), the original assignee of the '967 Patent.

12. The ’967 Patent has been in full force and effect since its issuance. Plaintiffs own by assignment the entire right and title in and to the ’967 Patent, including the right to seek damages for any infringement thereof.

13. The ’967 Patent is valid and enforceable.

14. The ’967 Patent is directed to, and its claims recite, patent-eligible subject matter under 35 U.S.C. § 101. For example, the ’967 Patent’s claims are directed to a “new and useful . . . machine[s],” 35 U.S.C. § 101, that improve upon prior art apparatuses and systems having redundant power supplies. The ’967 Patent’s specification discloses specific, concrete, and distinct inventive concepts that achieve specific improvements over prior art apparatuses and systems having redundant power supplies, which inventive concepts would not have been well understood, routine, or conventional to a person having ordinary skill in the art (“PHOSITA”) at the time of the invention. Moreover, the inventive concepts disclosed in the ’967 Patent’s specification are reflected in, and captured by, specific claim elements recited in the ’967 Patent’s claims.

15. The ’967 Patent is not directed to an abstract idea, law of nature, or natural phenomena. Rather, as noted above, the ’967 Patent is directed to a “new and useful . . . machine.” 35 U.S.C. § 101. For example, independent Claim 1 of ’967 Patent, and dependent Claims 2-8 that depend from Claim 1, are each directed to an “apparatus.” Ex. 1 at 6:18 (Claim 1, Preamble). The ’967 Patent’s claims are directed specific, tangible apparatuses and systems capable of efficiently supplying redundant power to a load without interruption in case the primary source of power experiences a failure or other anomaly. The ’967 Patent’s claims recite physical hardware structures—power supplies, electrical loads, and sources of electrical energy—physically coupled together and configured to supply redundant power in particular ways that are more efficient than approaches in the prior art. As is explained in the ’967 Patent’s specification, power supplies are

physical structures that can include "state machines, digital logic, analog circuitry, digital/analog hybrid circuitry, one or more processors or microcontrollers, lookup tables, voltage or current sensing elements," as well as "capacitors or other internal storage." *Id.* at 2:66-3:2; 3:41. The "load" is a machine that runs on electricity. *See id.* at 4:1-3. Example sources of power are a "power distribution utility," a "generator set," or "an inverter," which could, for example, be powered "by solar or wind energy." *Id.* at 2:26-28. To transfer electricity between these structures, they must be physically "coupled" together, such as by connecting the two with wires. *See id.* at 1:47-48. Altogether, the '967 Patent's claims are directed to specific apparatuses and systems, with particular physical components configured to work together in specific ways. The result is new and improved redundant power supply apparatuses and systems that address identified shortcomings of prior art redundant power supply implementations. *See id.* at 1:10.

16. The '967 Patent's claims are directed to and recite inventive concepts that reflect teachings in the '967 Patent's specification regarding specific distinctions over the prior art. These inventive concepts would not have been viewed by a PHOSITA as well-understood, routine, or conventional activity at the time of the invention.

17. For example, regarding a first inventive concept, the '967 Patent's specification describes shortcomings of prior art systems with redundant power supplies, stating:

> Various devices and systems use multiple power supplies in order to increase reliability or "up time" through redundancy. ***In a typical scenario, each operating power supply bears an approximately equal share of the load. However, such a balanced load sharing approach often results in each power supply operating with less than optimum efficiency.*** The present teachings address the foregoing and other concerns.

Id. at 1:5-12 (emphasis added). The specification further explains that this shortcoming of the prior art is addressed by a first inventive concept. For example, the specification states:

> In one embodiment, an apparatus includes a first power supply coupled to an electrical load and a first source of electrical energy. ***The first power supply is***

> ***configured to issue an alert signal indicative of a failure condition of the first source of electrical energy***. The apparatus also includes a second power supply coupled to the electrical load and a second source of electrical energy. ***The second power supply is configured to transition from a lesser output level to a greater output level in response to an activation signal***.

Id. at 1:43-51 (emphasis added). In other words, rather than "each operating power supply bear[ing] an approximately equal share of the load" and thus "operating with less than optimum efficiency" as in prior art systems with redundant power supplies, *id.* at 1:5-12, the second power supply of the '967 Patent invention begins operation at "a lesser output level" than the first power supply, then transitions to a "greater output level" than the first power supply only after the first power supply sends "an alert signal indicative of a failure condition of the first source of electrical energy." *Id.* at 1:43-51. Unlike the prior art, the '967 Patent explains, the foregoing first inventive concept "allows for each of the power supplies to operate at or near optimum efficiency while providing for the electrical demands of the load being served." *Id.* at 4:9-12.

18. The foregoing first inventive concept is not only described in the '967 Patent's specification, but is also reflected in and captured by specific claim elements recited in the '967 Patent's claims. For example, Claim 1 of the '967 Patent is reproduced below, with bolding to illustrate specific claim language directed to the foregoing first inventive concept:

> **1.** An apparatus, comprising:
>
> a first power supply coupled to an electrical load and a first source of electrical energy, ***the first power supply configured to issue an alert signal indicative of a failure condition of the first source of electrical energy***; and
>
> a second power supply coupled to the electrical load and a second source of electrical energy, ***the second power supply configured to transition from a lesser output level to a greater output level in response to an activation signal***.

Id. at 6:18-27 (Claim 1) (emphasis added).

19. The foregoing first inventive concept would not have been viewed by a PHOSITA as being well-understood, routine, or conventional at the time of the invention. To the contrary,

during prosecution before the United States Patent and Trademark Office on the application that issued as the '967 Patent, the Examiner expressly noted the foregoing inventive concept as a distinction over the prior art in the Examiner's "statement of reasons for allowance," stating:

> The following is an examiner's ***statement of reasons for allowance***: the prior art of record does not disclose or suggest, inter alia, ***the first power supply configured to issue an alert signal upon failure of the first source*** and a ***second power supply configured to transition from a lesser output level to a greater output level***.

Ex. 2 at ECF 43 (emphasis added).

20. As noted above, Claim 1 recites the foregoing first inventive concept. Additionally, although it was not required by the Examiner for allowance, the '967 Patent's dependent claims further build upon the foregoing first inventive concept. For example, dependent Claim 3 further specifies that "the first and second power supplies [are] coupled such that the activation signal is defined by the alert signal." Ex. 1 at 6:32-34 (Claim 3). As another example, dependent Claim 4 further specifies that the electrical load be "configured to provide the activation signal to the second power supply in response to the alert signal from the first power supply." *Id.* at 6:35-39. In other words, dependent Claims 3 and 4 recite particular ways that the activation signal is provided to the second power supply after the first power supply issues its alert signal.

21. As another example, the '967 Patent's specification discloses a second inventive concept, related to but distinct from the first inventive concept, which is discussed for example in reference to Figure 2 of the '967 Patent:

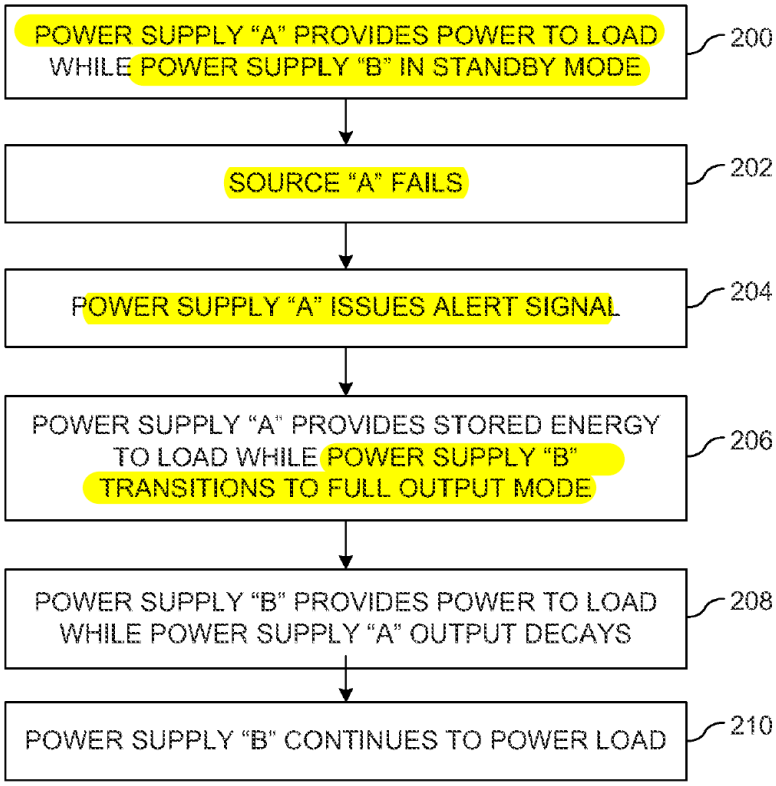


FIG. 2

Id. at Fig. 2 (emphasis added). As noted, the '967 Patent describes the inefficiency of prior art redundant power supply systems, for example stating: "In a typical scenario, each operating power supply bears an approximately equal share of the load. However, such a balanced load sharing approach often results in each power supply operating with less than optimum efficiency." *Id.* at 1:7-10. In contrast, for the Figure 2 embodiment of the invention, the '967 patent explains:

> At 200, a ***first power supply provides all needed operating power to a load***, while a ***second power supply operates in a <u>standby mode</u>***. For purpose of illustrative example, it is assumed that the power supply "A" 106 provides all needed conditioned power 110 to a load 112. ***It is also assumed that the power supply "B" 108 operates in a <u>standby mode</u>, providing no power output to the load 112.***
>
> At 202, ***a first independent source of energy fails***. For purposes of the ongoing example, it is assumed that independent source "A" 102 fails in a low-voltage or no-voltage condition. Other anomalous conditions of the source 102 can also occur.
>
> At 204, ***the first power supply detects an anomalous (failed) condition of the first independent energy source and issues a corresponding input fault signal***. For

> purposes of example, it is assumed that power supply "A" 106 detects the failed condition of source 102 and issues an input fault signal 114 to power supply "B" 108. The input fault signal can also be referred to as an alert signal 114.
>
> At 206, the first power supply continues to provide energy from storage to the load while ***the second power supply <u>transitions to a fall (i.e., normal) output mode</u>***.

Id. at 3:18-39 (emphasis added). In other words, the inefficiency of prior art systems having redundant power supplies where "each operating power supply bears an approximately equal share of the load" (*id.* at 1:7-10) is overcome by the invention by having one power supply operate in a "standby mode" to start, then "anticipated failure of a power supply results in the provision of a corresponding alert (or activation) signal or message," whereupon "[a]nother power supply, operating in a no-output (i.e., standby) mode responds to the signal by transitioning as quickly as possible to full output." *Id.* at 3:63-4:1. Such "primary/standby operation" allows for operation "at or near optimum efficiency." *Id.* at 4:50-51; *see also, e.g.*, *id.* at 4:9-12 (explaining that this inventive concept "allows for each of the power supplies to operate at or near optimum efficiency while providing for the electrical demands of the load being served").

22. The foregoing second inventive concept is not only described in the '967 Patent's specification, but is also reflected in and captured by specific claim elements recited in the '967 Patent's claims. For example, Claim 6 of the '967 Patent recites:

> **6.** The apparatus according to claim **1**, at least the first or second power supply ***configured to operate at a lesser output level in response to a <u>standby</u> signal***, the first power supply further configured to ***transition from the lesser output level to a greater output level in response to a respective activation signal***."

Id. at 6:43-48 (Claim 6) (emphasis added).

23. As another example, the '967 Patent's specification discloses a third inventive concept, related to but distinct from the first two inventive concepts. As noted, the '967 Patent describes the inefficiency of prior art redundant power supply systems: "In a typical scenario, each operating power supply bears an approximately equal share of the load. However, such a balanced

load sharing approach often results in each power supply operating with less than optimum efficiency." *Id.* at 1:7-10. As discussed above, this inefficiency can be addressed by having one redundant power supply operate at either a "lesser output level" (e.g., as in Claim 1) or in a "standby" mode (e.g., as in Claims 2 and 14), then having the second power supply transition to full power after the first source of electrical energy fails. However, this could risk periods of time where the system is down during a transition from a first power supply to a second power supply. The '967 Patent addresses this issue in embodiments of the invention that are discussed with reference to Figures 2 and 3. For example, with reference to Figure 2, the specification states:

> At 202, ***a first independent source of energy fails***. For purposes of the ongoing example, it is assumed that independent source "A" 102 fails in a low-voltage or no-voltage condition. Other anomalous conditions of the source 102 can also occur.
>
> At 204, the first power supply detects an anomalous (failed) condition of the first independent energy source and issues a corresponding input fault signal. For purposes of example, it is assumed that power supply "A" 106 detects the failed condition of source 102 and issues an input fault signal 114 to power supply "B" 108. The input fault signal can also be referred to as an alert signal 114.
>
> At 206, the first power supply continues to provide energy from storage to the load while ***the second power supply transitions to a fall (i.e., normal) output mode***. For purposes of the example, ***it is assumed that the power supply 106 includes capacitors or other internal storage (not shown) sufficient to provide conditioned power 110 to the load 112, while the power supply 108 transitions from standby (i.e., no output) to full power output mode***.

Id. at 3:18-39 (emphasis added).

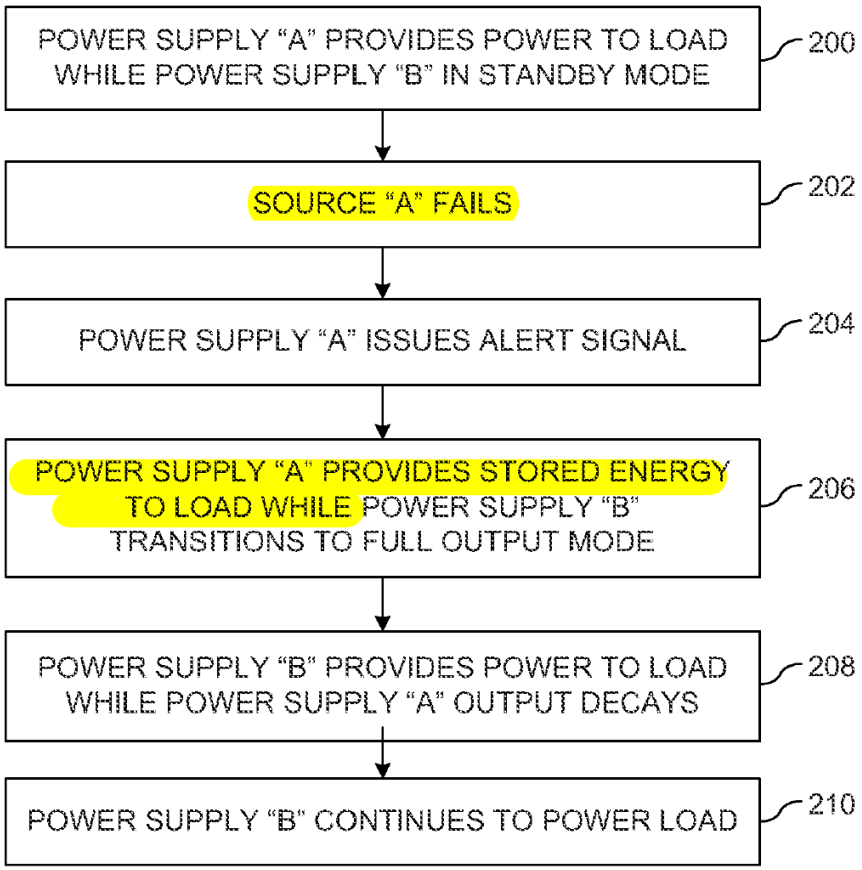


FIG. 2

Id. at Fig. 2 (emphasis added). The specification further explains: "In this way, a brief period occurs during which the two power supplies are providing respective fractions of the required load. The responding 'take over' power supply assumes full duty prior to and during the decay and failure of the other power supply." *Id.* at 4:5-9.

24. For example, as further explained with reference to Figure 3, the specification explains that, without power from "capacitors or other internal storage," *id.* at 3:18-39, being provided by the first power supply during the transition period, the load would be "subject to an interruption in operating power" during the transition period from the first power supply to the second power supply, *id.* at 5:20. Figure 3 provides a timing diagram showing how this period of downtime is avoided by implementation of the foregoing third inventive concept:

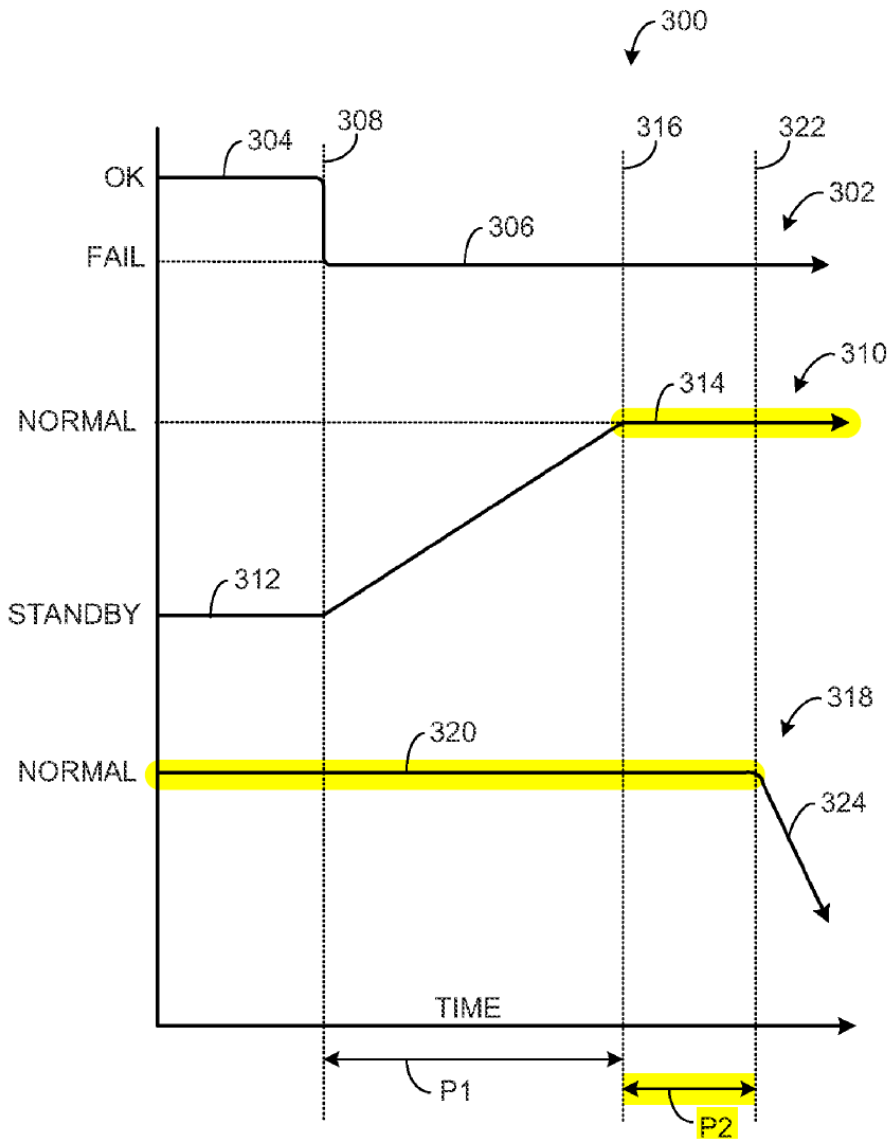


FIG. 3

Id. at Fig. 3 (emphasis added). As the specification explains, "FIG. 3 is a signal timing diagram" that "includes a voltage 302 corresponding to a particular independent source of electrical energy." *Id.* at 4:53-56. "As depicted, the voltage 302 drops from a normal ('OK') operating level 304 to an insufficient ('FAIL') level 306 at a time 308." *Id.* at 4:56-60. Meanwhile, "an output voltage 310 provided by a 'standby' power supply 'B' . . . is initially at a standby (zero) output level 312," but then "begins to transition toward a full operating level 314" after the transition is "triggered by

an alert, activation or other signal provided to power supply 'B.'" *Id.* at 4:61-5:1. Additionally, the Figure 3 timing diagram "further includes an output voltage 318 provided by a ***'primary' power supply 'A'*** of the illustrative redundant system" which "***is deprived of normal input electrical energy beginning at time 308***." *Id.* at 5:4-9 (emphasis added). Nevertheless, because the primary power supply "***includes capacitors or other internal storage***," *id.* at 3:39-44 (emphasis added), the "***normal (i.e., regulated) output level 320 continues until time 322***, at which point the voltage 318 assumes a rate of decay 324 as the energy storage (not shown) is discharged below controllable output levels," *id.* at 5: 12-16 (emphasis added). As a result of this, "there is an ***overlap period P2 between times 316 and 322*** in which voltages 310 and 318 are ***both at full output level***," such that "the load served by voltages 310 and 318 ***is not subject to an interruption in operating power, despite the failure of independent voltage 302***." *Id.* at 5:16-21 (emphasis added). This particular application of energy storage infrastructure—to temporarily provide full operating power during transition from one power supply to another—was inventive and not well understood, routine, or conventional at the time of the invention.

25. The foregoing third inventive concept is not only described in the '967 Patent's specification, but is also reflected in and captured by specific claim elements recited in the '967 Patent's claims. For example, Claims 2 and 8 of the '967 Patent provide as follows:

> **2.** The apparatus according to claim **1**, ***the first power supply further configured to provide operating power to the electrical load while the second power supply transitions*** from the lesser output level to the greater output level.

Id. at 6:29-31 (Claim 2) (emphasis added).

> **8.** The apparatus according to claim **1**, ***the first power supply further configured to provide operating level power from internal energy storage to an electrical load while the second power supply transitions*** from the lesser output level to the greater output level in response to the activation signal.

Id. at 6:53-57 (Claim 8) (emphasis added).

26. The ’967 Patent is not directed to abstract ideas merely implemented on general purpose machines, but rather is directed to specific, tangible, and concrete improvements to the technology of redundant power supply systems. That is, the ’967 Patent is directed to specific, inventive ways of improving upon redundant power supplies through particular arrangements and configurations of hardware components. The problems solved by the inventive concepts described and claimed in the ’967 Patent are improvements to redundant power supply technology itself, not mere implementations of conventional human activity.

27. The examples set forth above are non-limiting illustrations of inventive concepts described in the ’967 Patent’s specification and recited in its claims. A PHOSITA would not have understood the inventive concepts disclosed and claimed in the ’967 Patent to be well understood, routine, or conventional at the time of the invention.

FIRST CLAIM

(Infringement of U.S. Patent No. 7,939,967)

28. Plaintiffs re-allege and incorporate herein by reference Paragraphs 1-27 of their Complaint.

29. Google has been on notice of the ’967 Patent and a specific factual basis for its infringement of the ’967 Patent at least since the date it was served with the original Complaint in the above-captioned litigation. On information and belief, Google has not taken any action to stop its infringement.

30. Plaintiffs are informed and believe, and thereon allege, that Google has infringed and unless enjoined will continue to infringe one or more claims of the ’967 Patent, in violation of 35 U.S.C. § 271, by, among other things, making, using, selling, and/or offering for sale, without authority or license, Google data centers across the United States with redundant power systems that infringe the ’967 Patent. For example, Google’s data center located in the Northern District

of Texas at or near 3441 Railport Pkwy, Midlothian, Ellis County, TX 76065 (hereinafter, the "Midlothian Data Center") includes redundant power systems that infringe the '967 Patent.

31. Google broke ground on its Midlothian Data Center in 2019, and Google has since expanded its Midlothian Data Center to include multiple data center buildings. *See, e.g.*, https://www.google.com/about/datacenters/locations/ellis-county/ (last visited Mar. 27, 2025) (stating "Google has proudly called Texas home since 2009 with offices in Austin and Dallas and data centers in Ellis County" and noting that Google invested "$600 million to open [its] first Texas data center in Midlothian" in 2019 and "another $600 million . . . to build a second Texas data center in Red Oak" in 2023); https://www.datacenterdynamics.com/en/news/google-files-to-build-fourth-data-center-at-midlothian-campus-in-texas/ (last visited Mar. 27, 2025) ("Google has filed to construct a new data center building at its campus outside Dallas, Texas," including "Building 4' at 3441 Railport Parkway in Midlothian, Ellis County."). A satellite image of Google's Midlothian Data Center, provided by the service Google Maps, is shown below:

https://www.google.com/maps/place/3441+Railport+Pkwy,+Midlothian,+TX+76065 (last visited Mar. 27, 2025).

32. Among other things, Google's Midlothian Data Center supports Google Cloud services, including the cloud service region that Google calls the "Dallas" Google Cloud region. *See, e.g.*, https://www.datacenterdynamics.com/en/news/google-files-to-build-fourth-data-center-at-midlothian-campus-in-texas/ (last visited Mar. 27, 2025) ("Google launched a Texas cloud region in Dallas in June 2022."); https://cloud.google.com/blog/products/infrastructure/a-google-cloud-region-now-available-in-dallas-texas (last visited Mar. 27, 2025) (June 7, 2022: "The new Google Cloud region in Dallas, Texas is now open. Google is proud to have roots in Texas, where over 2,400 Googlers from Android, Cloud, Ads and other product areas, support millions of Texas

businesses. . . . Today, we're excited to expand our presence in Texas with the launch of our newest Google Cloud region in Dallas . . . . Now open to Google Cloud customers, the Dallas region provides you with the speed and availability you need to innovate faster and build high-performing applications that cater to the needs of nearby end users. We've heard from many of you that the availability of your workloads and business continuity are increasingly top priorities. The Dallas region gives you added capacity and the flexibility to distribute your workloads across the U.S.").

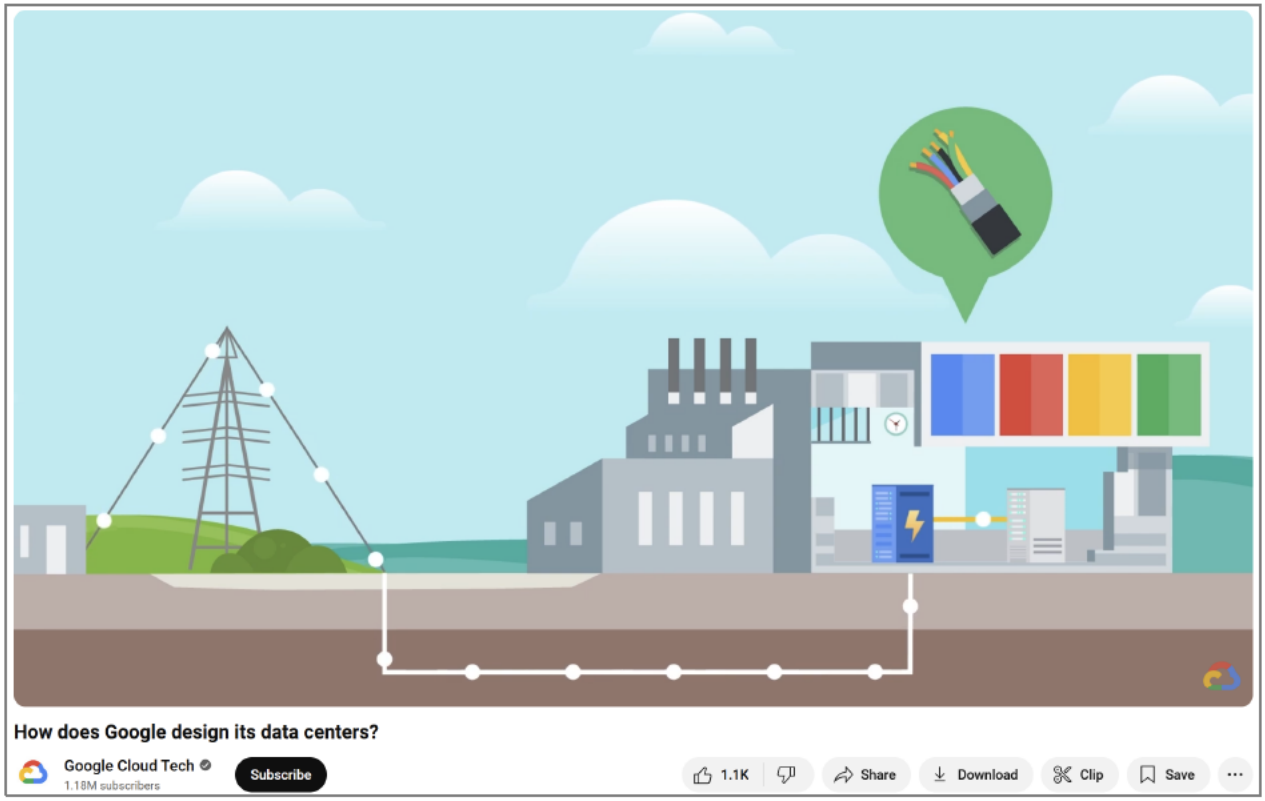
33. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 1 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

34. For example, Google's Midlothian Data Center includes an apparatus, comprising a first power supply coupled to an electrical load and a first source of electrical energy, the first power supply configured to issue an alert signal indicative of a failure condition of the first source of electrical energy. For example, Google's Midlothian Data Center offers power redundancy by connecting equipment to multiple power supplies with separate power sources. This may include, for example, a first power supply connected to a Google-owned power substation drawing power from a first source of electrical energy, and a second power supply connected to a second power source such as one of many on-site generators. The first power supply will issue an alert if its power source fails, which will signal a second power supply to transition to handling the full load. *See, e.g.*, https://cloud.google.com/docs/security/overview/whitepaper (last visited Mar. 27, 2025) ("Powering our data centers. To keep things running 24/7 and provide uninterrupted services, our data centers have redundant power systems and environmental controls. Every critical component has a primary and alternate power source, each with equal power. Backup generators can provide

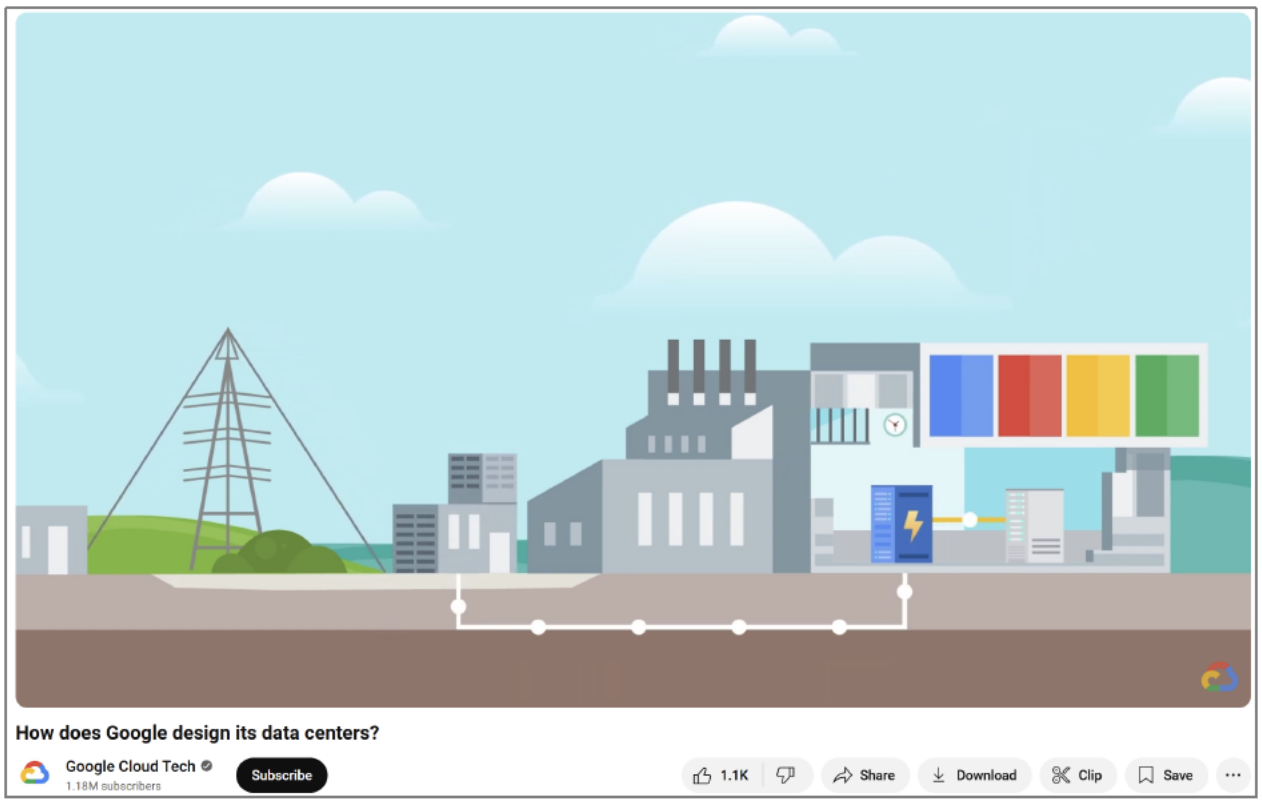
enough emergency electrical power to run each data center at full capacity."); https://www.google.com/about/datacenters/data-security/ (last visited Mar. 27, 2025) ("[O]ur emergency backup generators continue to work even during power failures.").

35. For example, the following YouTube video published by Google describes the redundant power systems used in Google's data centers, and this description appears to be consistent with the satellite imagery shown above of Google's Midlothian Data Center. *See, e.g.*, https://www.youtube.com/watch?v=9IZ4qPAL-vA&t=83s (last visited Mar. 27, 2025):

> "An electric system feeds into the building and provides a steady stream of electrons flowing to servers."



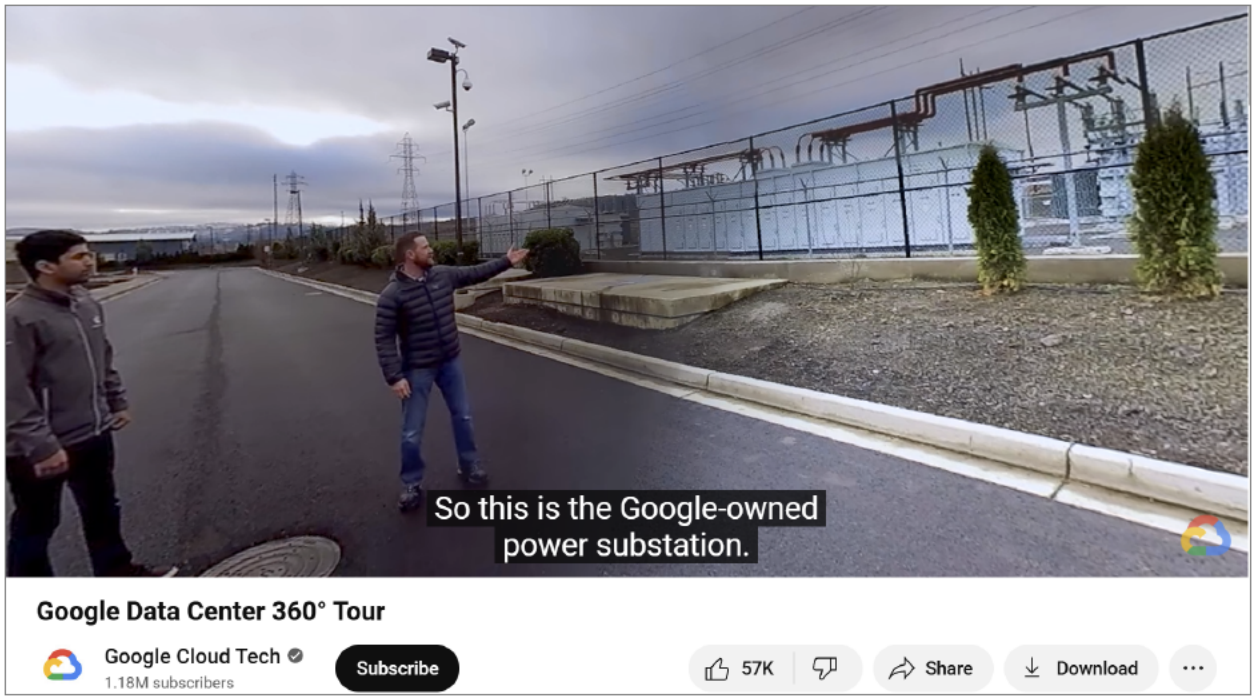
> "And, just in case our electric system goes out, we employ a backup energy source to provide redundant power supplies to servers."



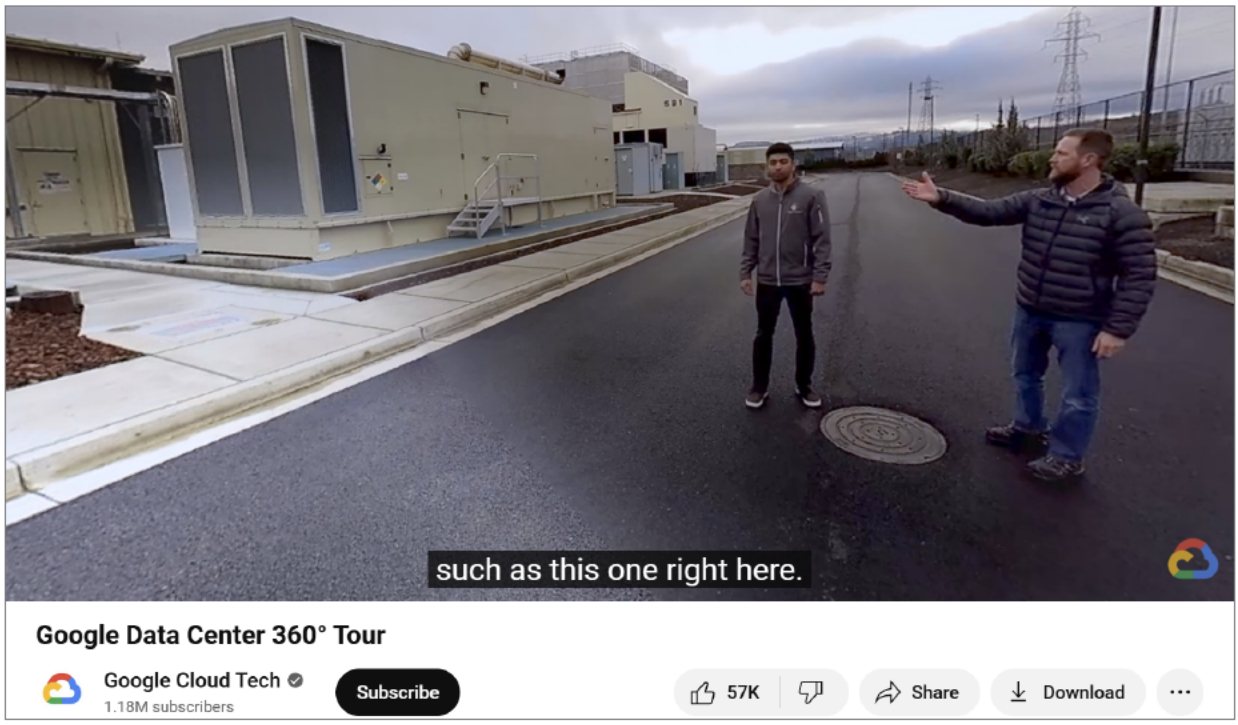
36. For further example, the following YouTube video published by Google provides a tour of a Google data center and describes the redundant power systems used in Google's data centers, and this description appears to be consistent with the satellite imagery of Google's Midlothian Data Center. *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=450s (last visited Mar. 27, 2025):

Sandeep: "So Brian, how do we power the cloud?"

Brian: "Well, that all starts at Google's power substation. Let's go take a look."



Brian: "So this is the Google-owned power substation. This is where the high voltage power enters the site. It's reduced, and then sent to multiple power distribution centers such as this one right here."

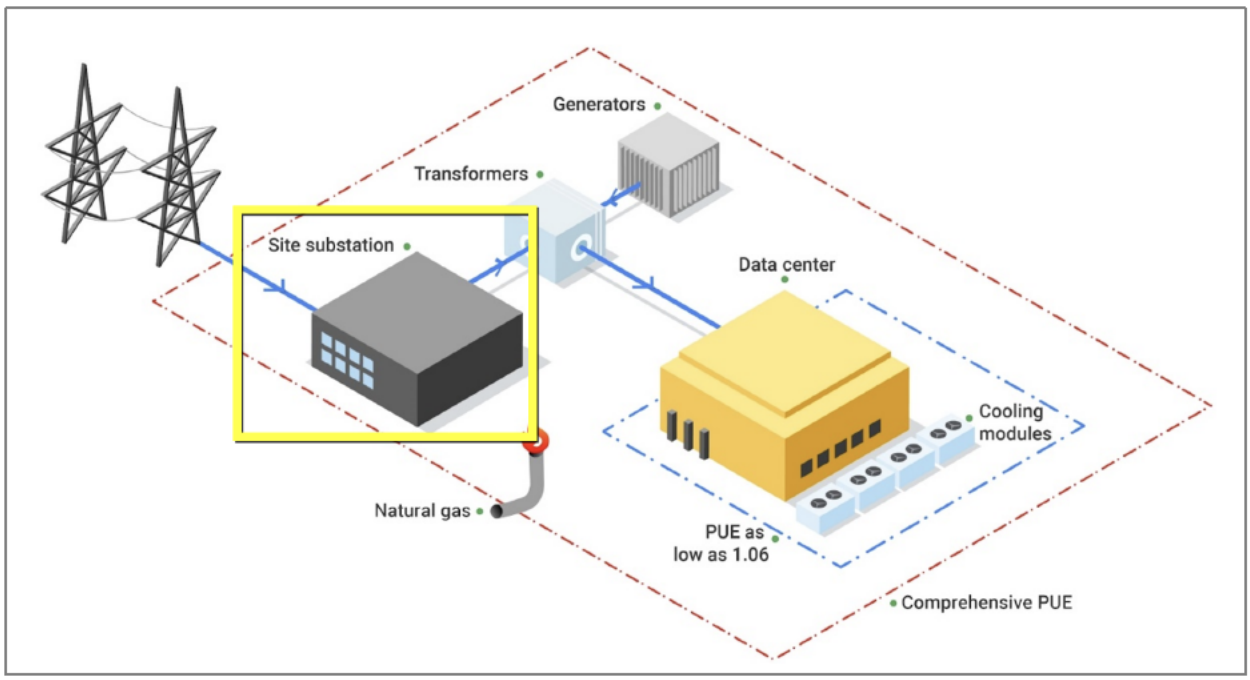


Sandeep: "What happens if a power distribution center loses power?"

Brian: "If it loses power, we have multiple generator and utility backup sources available to maintain power to those servers."

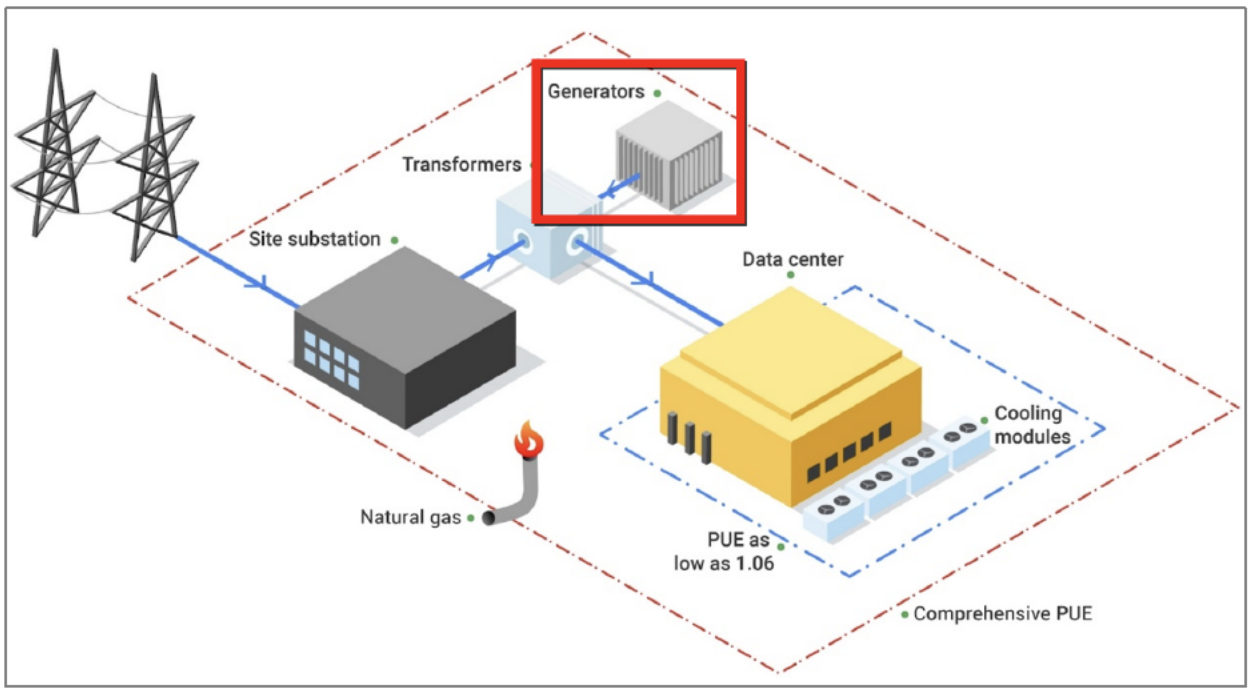
37. For example, a satellite image of Google's Midlothian Data Center, provided by Google Maps, is shown below, annotated to indicate the Google-owned power substation that draws power from a first source of electrical energy:

https://www.google.com/maps/place/3441+Railport+Pkwy,+Midlothian,+TX+76065 (last visited Mar. 27, 2025) (annotated with yellow box and yellow text). The foregoing satellite imagery also appears to be consistent with Google publications regarding its data centers generally. *See, e.g.*, https://datacenters.google/efficiency/ (last visited Mar. 27, 2025) (annotated with yellow box, showing the Google-owned power substation that draws power from a first source):



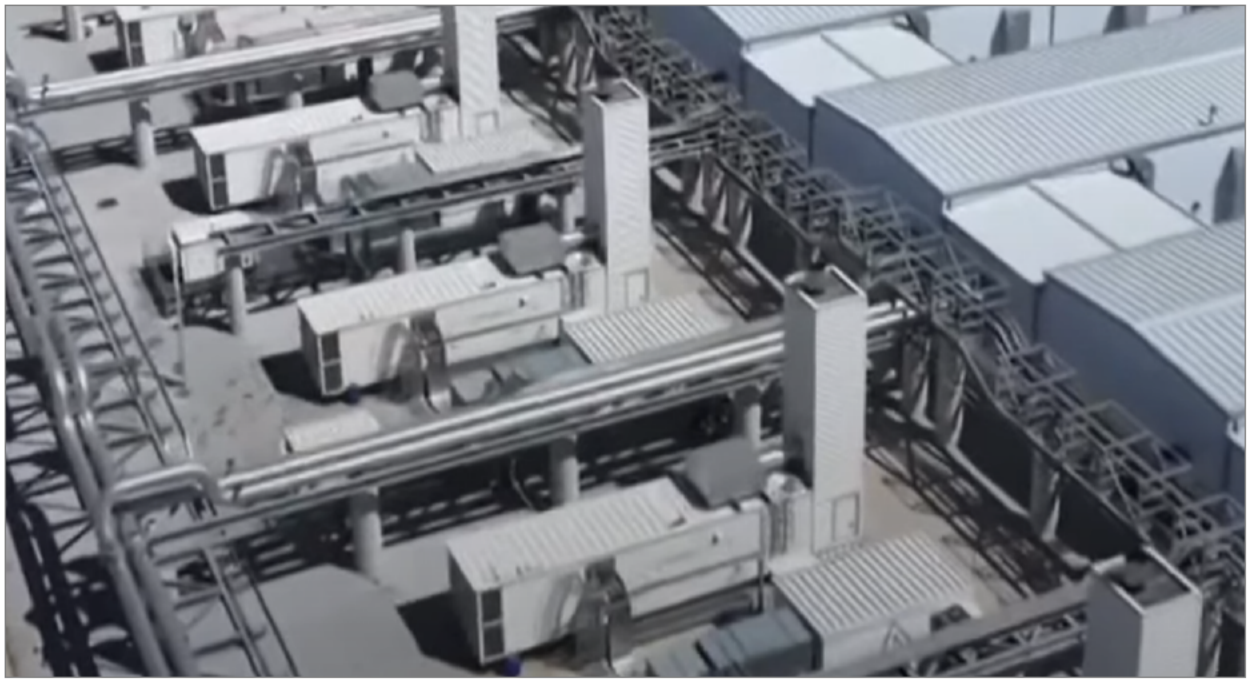
38. Additionally, for example, Google's Midlothian Data Center includes an apparatus, comprising a second power supply coupled to the electrical load and a second source of electrical energy, the second power supply configured to transition from a lesser output level to a greater output level in response to an activation signal. For example, Google's Midlothian Data Center comprises equipment connected to a second power supply coupled to a second power source such as one of multiple on-site generators. For example, a satellite image of Google's Midlothian Data Center, provided by Google Maps, is shown below, annotated to show buildings that appear to house the on-site generators that provide power redundancy to the Midlothian Data Center:

https://www.google.com/maps/place/3441+Railport+Pkwy,+Midlothian,+TX+76065 (last visited Mar. 27, 2025) (annotated with red boxes and red text). The foregoing satellite imagery also appears to be consistent with Google publications regarding its data centers generally. *See, e.g.*, https://datacenters.google/efficiency/ (last visited Mar. 27, 2025) (annotated with red box, depecting the generators that provide power redundancy to the Google data center):



39. For example, Google's Midlothian Data Center appears to use diesel generators housed within buildings, as indicated by the exhaust towers extending upward from each building:

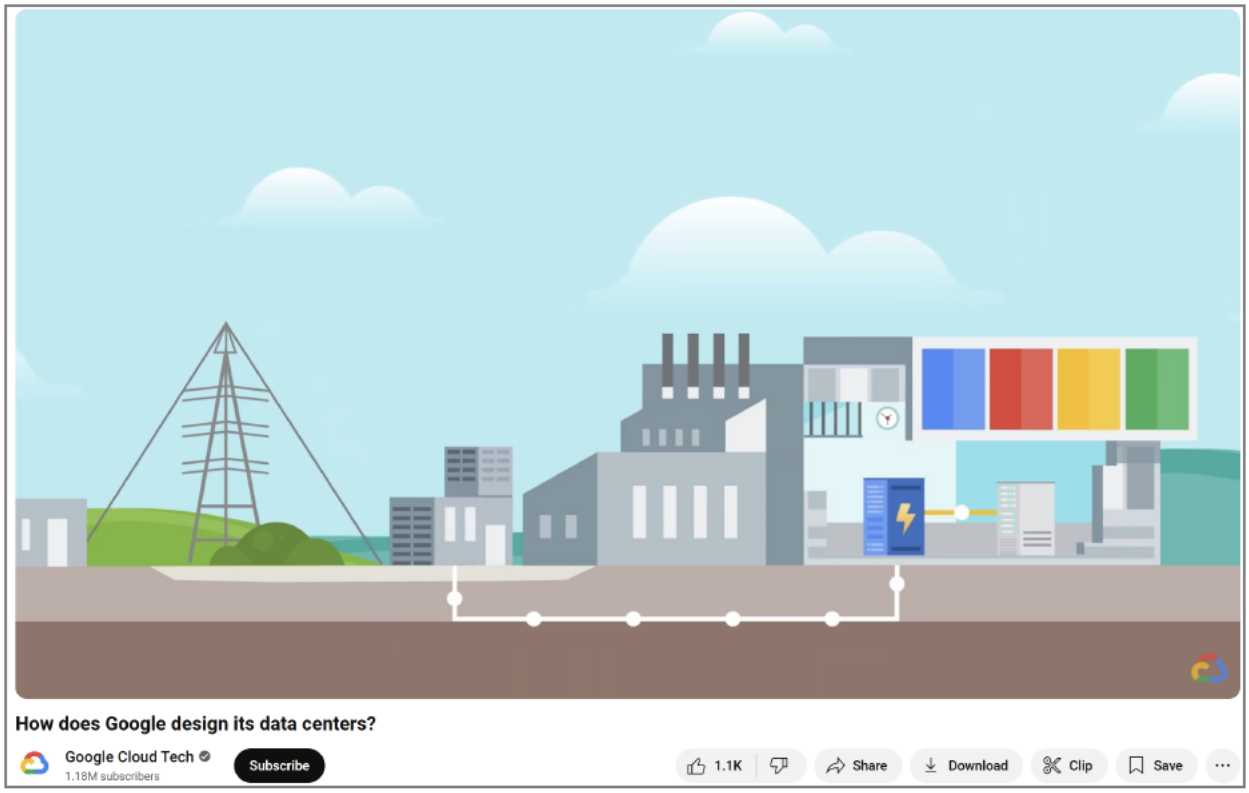
Apple Maps, 3D View (last visited Dec. 27, 2024); *see also, e.g.*:



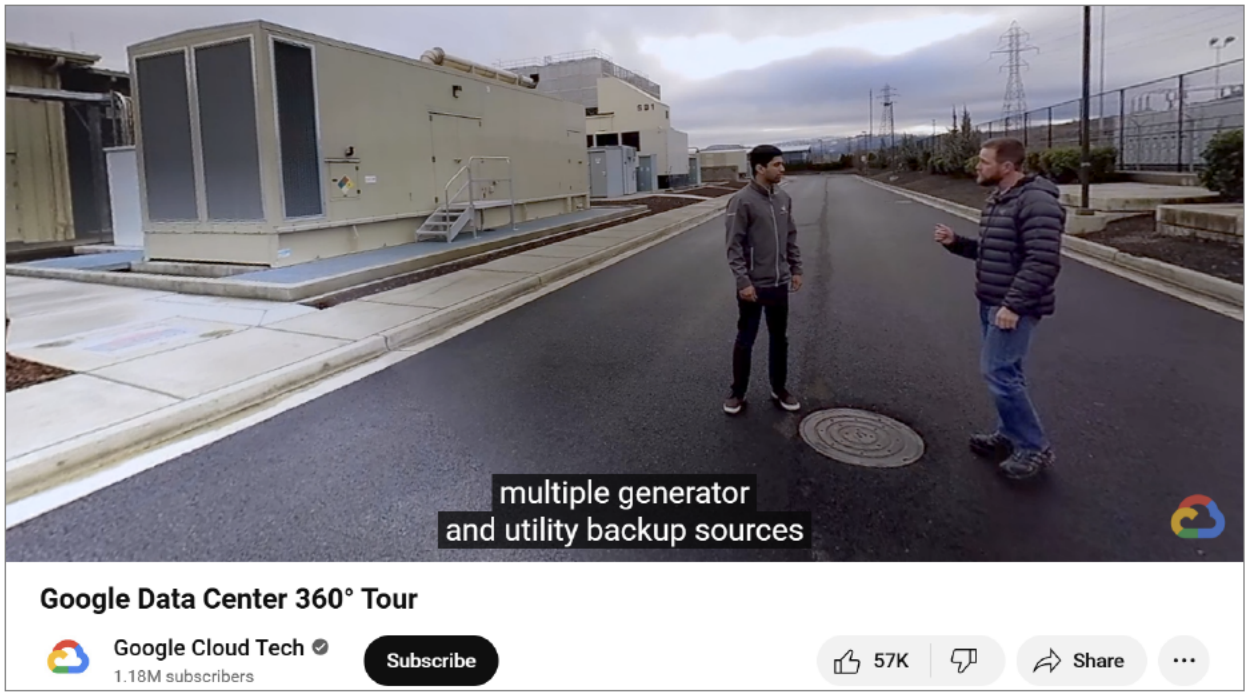
https://www.youtube.com/watch?v=2TGL3LMWe54&t=17s (last visited Mar. 27, 2025).

40. In Google's Midlothian Data Center, for example, the first power supply will issue an alert if its electrical power source fails, which will signal the second power supply to transition to handling the full load. *See, e.g.*, https://cloud.google.com/docs/security/overview/whitepaper (last visited Mar. 27, 2025) ("Powering our data centers. To keep things running 24/7 and provide uninterrupted services, our data centers have redundant power systems and environmental controls. Every critical component has a primary and alternate power source, each with equal power. Backup generators can provide enough emergency electrical power to run each data center at full capacity."); https://www.google.com/about/datacenters/data-security/ (last visited Mar. 27, 2025) ("[O]ur emergency backup generators continue to work even during power failures."). For further example, the following YouTube videos published by Google are consistent with the foregoing use of generators in Google data centers. *See, e.g.*, https://www.youtube.com/watch?v=9IZ4qPAL-vA&t=89s (last visited Mar. 27, 2025):

"And, just in case our electric system goes out, we employ a backup energy source to provide redundant power supplies to servers."



https://www.youtube.com/watch?v=zDAYZU4A3w0&t=468s (last visited Mar. 27, 2025):



Sandeep: "What happens if a power distribution center loses power?"

Brian: "If it loses power, we have multiple generator and utility backup sources available to maintain power to those servers."

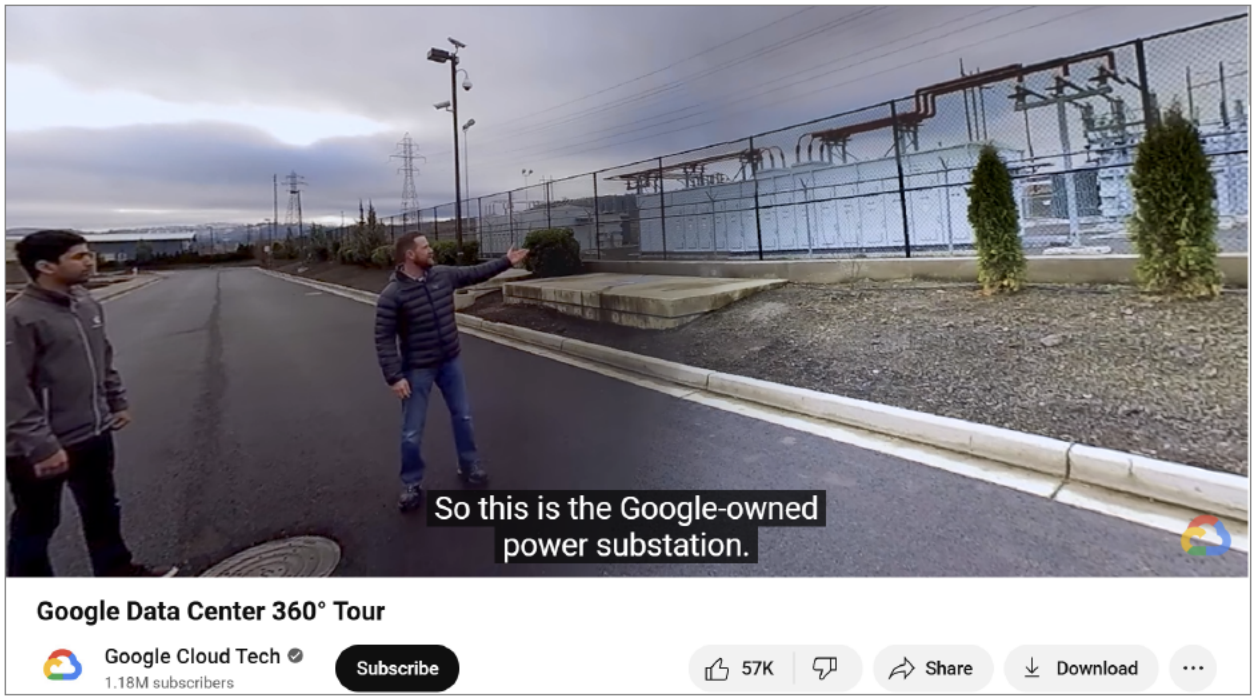
41. Additionally, for example, while Google's Midlothian Data Center appears to use diesel fueled generators, Plaintiffs note that some other Google data centers built in recent years may potentially be using batteries for power redundancy instead of diesel generators. *See, e.g.*, https://www.datacenterfrontier.com/featured/article/11428503/google-looks-to-batteries-as-replacement-for-diesel-generators (last visited Mar. 27, 2025) ("Google will use large batteries to replace the diesel generators at its data center in Belgium, describing the project as a first step towards using cleaner technologies to provide backup power for millions of servers around the world."). Google data centers that use batteries as a second power source infringe exemplary claim 1 of the '967 patent in substantially the same manner as that outlined above for the Midlothian Data Center, just with batteries being substituted as a second source of electrical energy.

42. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 2 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

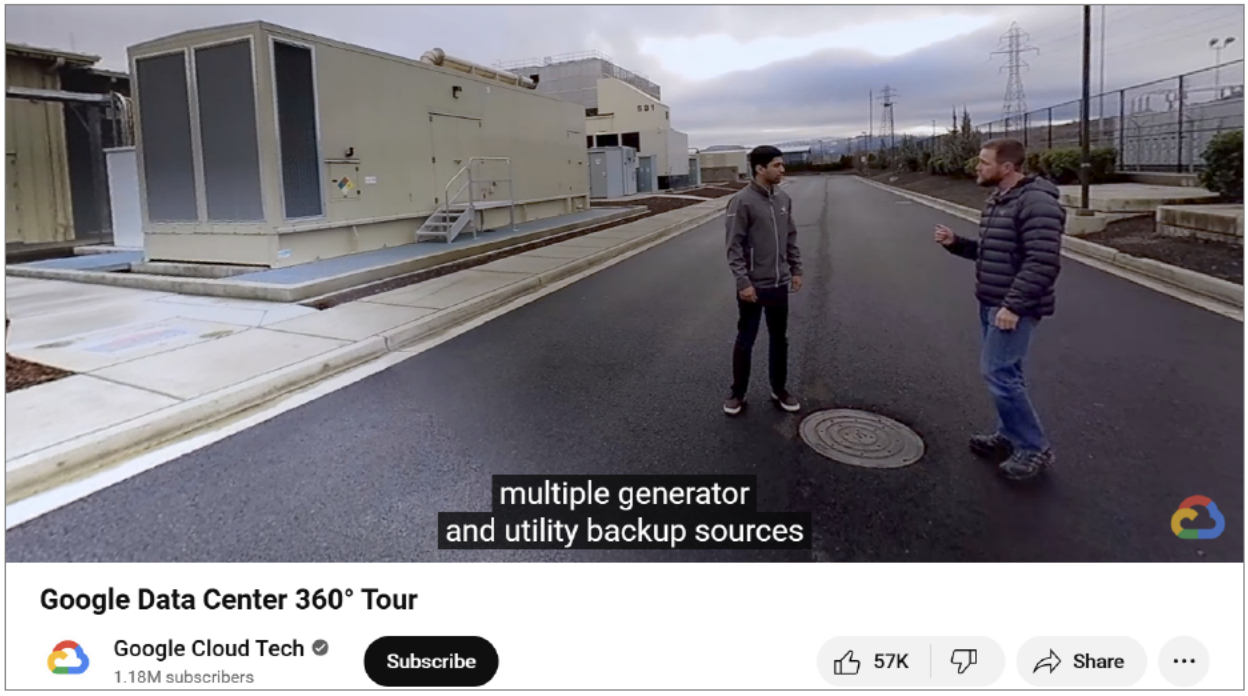
43. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which the first power supply is further configured to provide operating power to the electrical load while the second power supply transitions from the lesser output level to the greater output level.

44. For example, "[e]very critical component has a primary and alternate power source, each with equal power." https://cloud.google.com/docs/security/overview/whitepaper (last visited Mar. 27, 2025). In order to "provide uninterrupted services," the primary power source, such as a site substation, contains capacitor banks or similar energy storage infrastructure sufficient to monetarily provide full operating power while the alternate power source with equal power takes over. *See id.* Such infrastructure stores excess power after power drawn from the primary source has been "reduced," and is able to use that stored power to ensure that no interruption occurs while the second power source takes over. *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=450s (last visited Mar. 27, 2025):

Brian: "So this is the Google-owned power substation. This is where the high voltage power enters the site. It's reduced, and then sent to multiple power distribution centers such as this one right here."



This allows Google's Midlothian Data Center not merely to regain, but rather "to maintain" power in the event of an outage. *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=468s (last visited Mar. 27, 2025):



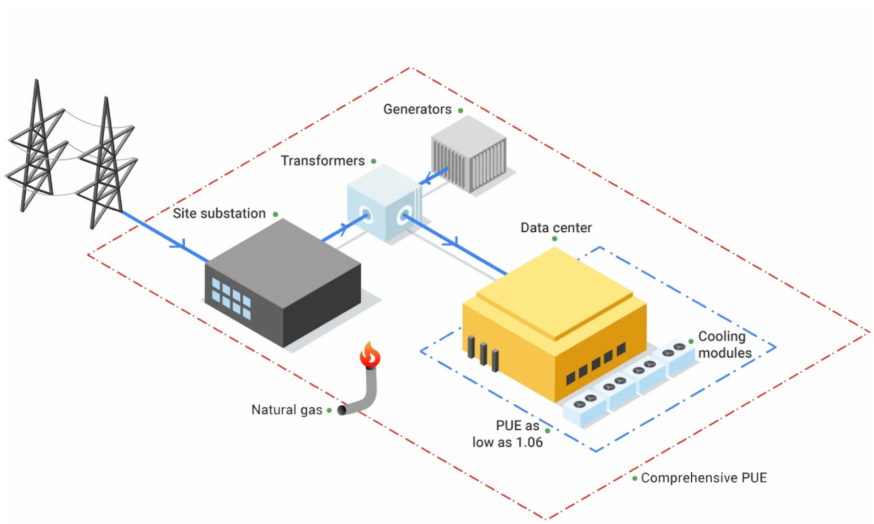
Sandeep: "What happens if a power distribution center loses power?"

Brian: "If it loses power, we have multiple generator and utility backup sources available ***to maintain*** power to those servers."

45. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 3 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

46. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which the first and second power supplies are coupled such that the activation signal is defined by the alert signal.

47. For example, the site substation drawing power from the electrical grid is coupled with on-site generates via a transformer, such that the generators begin powering the data center in response to an alert signal sent to activate the generators upon detection of an anomalous condition of the electrical source providing power to the site substation. *See, e.g.*, https://datacenters.google/efficiency/ (last visited Mar. 27, 2025) (blue arrows showing site substation and generators coupled via transformer):

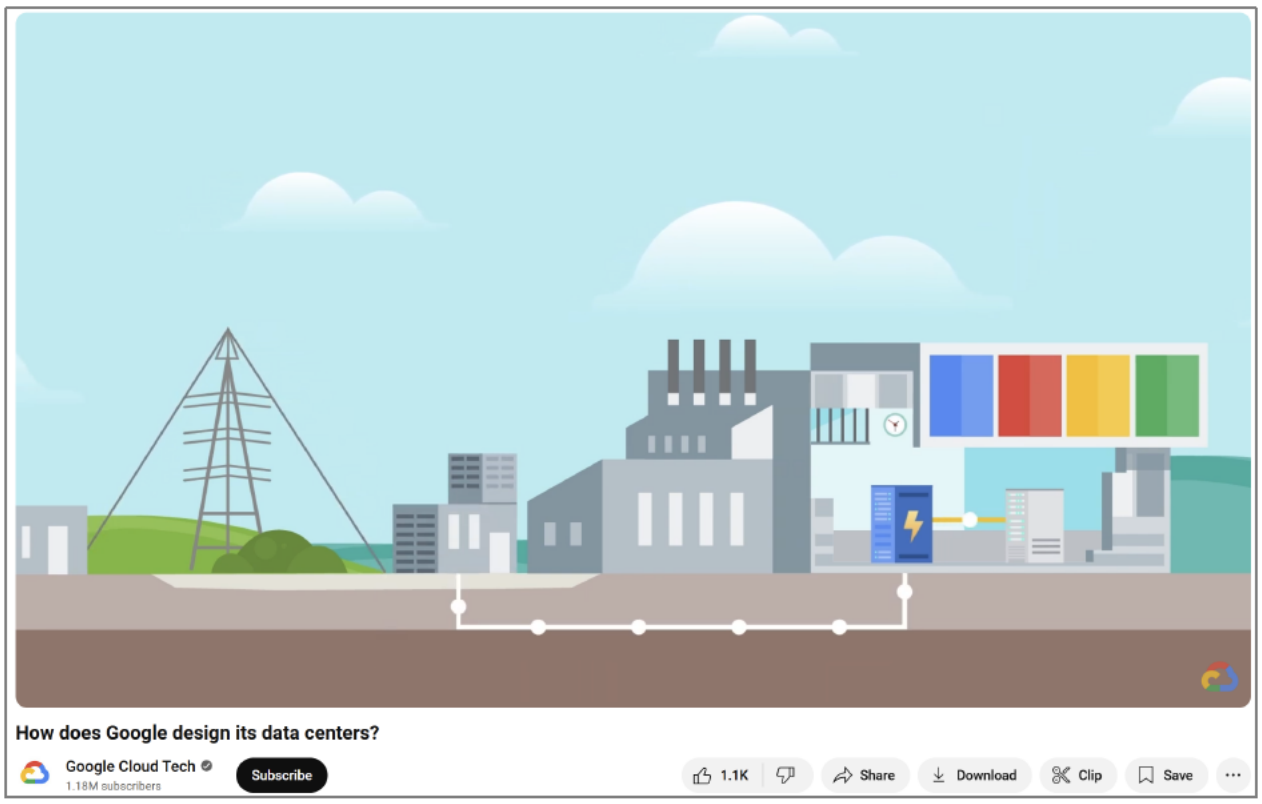


48. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 4 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

49. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which the electrical load is configured to provide the activation signal to the second power supply in response to the alert signal from the first power supply.

50. For example, in response to an interruption in the "steady stream of electrons flowing to servers" from the primary power supply, Google's backup energy source begins providing power to the data center. *See, e.g.*, https://www.youtube.com/watch?v=9IZ4qPAL-vA&t=83s (last visited Mar. 27, 2025):

> "And, just in case our electric system goes out, we employ a backup energy source to provide redundant power supplies to servers."



51. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 5 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

52. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which the first power supply is further configured to transition from a lesser output level to a greater output level in response to a signal indicative of an anomaly in the second source of electrical energy.

53. For example, an anomaly indicative of an interruption to the "steady stream of electrons flowing to servers" can trigger the on-site generators to begin providing power. *See, e.g.*, https://www.youtube.com/watch?v=9IZ4qPAL-vA&t=83s (last visited Mar. 27, 2025).

54. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 6 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

55. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which at least the first or second power supply is configured to operate at a lesser output level in response to a standby signal, and the first power supply is further configured to transition from the lesser output level to a greater output level in response to a respective activation signal.

56. For example, the first power supply operates at standby while "[b]ackup generators . . . provide enough emergency electrical power to run [the] data center at full capacity." https://cloud.google.com/docs/security/overview/whitepaper (last visited Mar. 25, 2025). When the backup generators have served their purpose and the primary power supply is once again fully operational, the primary power supply receives an activation signal and resumes normal operation.

57. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 7 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

58. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which a third power supply is configured to transition from a lesser output level to a greater output level in response to an activation signal.

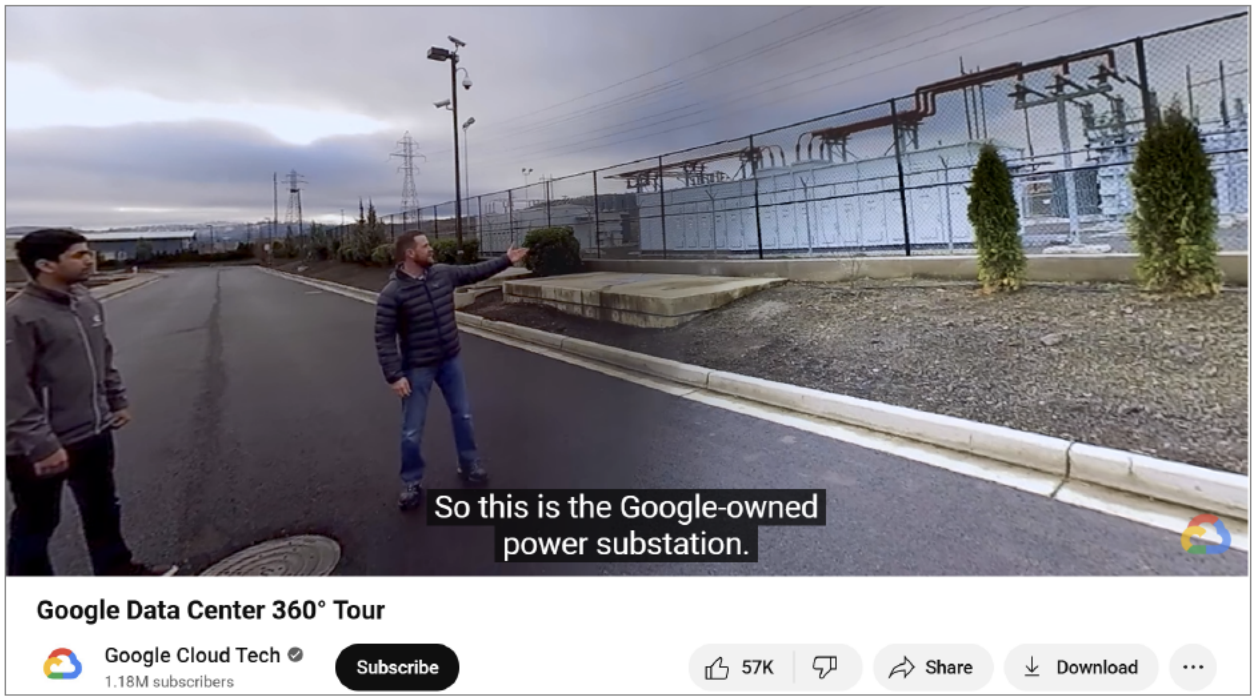
59. For example, Google has "***multiple*** generator and utility backup sources available to maintain power to th[e] servers." *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=450s (last visited Mar. 27, 2025). For further example, "critical" components, which contain "a primary and alternative power source," may have further "[b]ackup generators" sufficient to provide "emergency electrical power." *See* https://cloud.google.com/docs/security/overview/whitepaper (last visited Mar. 27, 2025).

60. By way of example and without limitation, Google's Midlothian Data Center includes redundant power systems that embody every limitation of claim 8 of the '967 Patent, literally or under the doctrine of equivalents, as set forth below. The further descriptions below, which are based on publicly available information, are preliminary examples and are non-limiting.

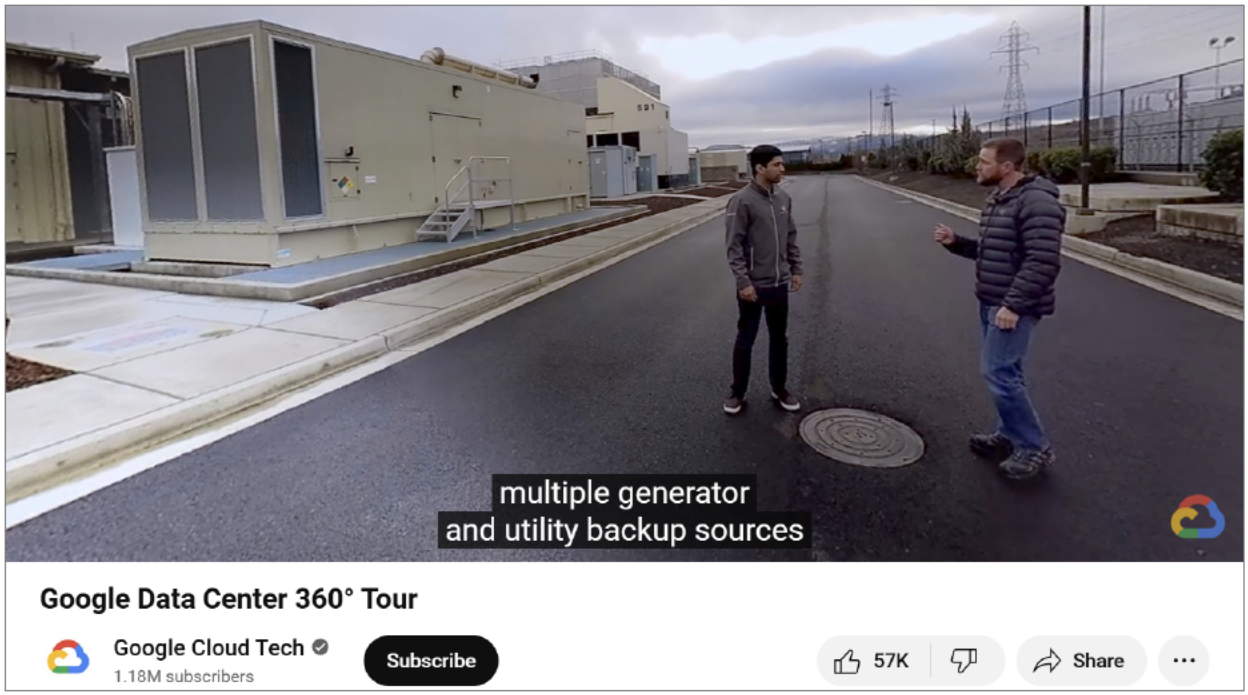
61. As discussed above, Google's Midlothian Data Center includes an apparatus that infringes claim 1 of the '967 Patent. Upon information and belief, Google's Midlothian Data Center also contains an infringing apparatus in which the first power supply is further configured to provide operating level power from internal energy storage to an electrical load while the second power supply transitions from the lesser output level to the greater output level in response to the activation signal.

62. For example, in order to "provide uninterrupted services," the primary power source, such as a site substation, contains capacitor banks or similar energy storage infrastructure sufficient to monetarily provide full operating power while the alternate power source with equal power takes over. *See id.* Such infrastructure stores excess power after power drawn from the primary source has been "reduced," and is able to use that stored power to ensure that no interruption occurs while the second power source takes over. *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=450s (last visited Mar. 27, 2025):

Brian: "So this is the Google-owned power substation. This is where the high voltage power enters the site. It's reduced, and then sent to multiple power distribution centers such as this one right here."



This allows Google's Midlothian Data Center not merely to regain, but rather to "to maintain" power in the event of an outage. *See, e.g.*, https://www.youtube.com/watch?v=zDAYZU4A3w0&t=468s (last visited Mar. 27, 2025):



Sandeep: "What happens if a power distribution center loses power?"

Brian: "If it loses power, we have multiple generator and utility backup sources available ***to maintain*** power to those servers."

63. As a result of Google's infringement of the '967 Patent, Plaintiffs have been damaged. Plaintiffs are entitled to recover damages sustained as a result of Google's wrongful acts in an amount subject to proof at trial.

64. In addition, Google's infringing acts and practices have caused and are causing immediate and irreparable harm to Plaintiffs.

65. Plaintiffs are informed and believe, and thereon allege, that Google's infringement of the '967 Patent is and continues to be willful. As noted above, Google had knowledge of the '967 Patent and its infringement of the '967 Patent at least since the date it was served with the original Complaint in the above-captioned litigation. Google continues to infringe in a wanton, malicious, and egregious manner, with reckless disregard for Plaintiffs' patent rights. Thus, Google's infringing actions have been and continue to be consciously wrongful.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray for judgment against Google as follows:

A. That Google has infringed the ’967 Patent, and unless enjoined will continue to infringe the ’967 Patent;

B. That Google has willfully infringed the ’967 Patent;

C. That Google pay Plaintiffs damages adequate to compensate Plaintiffs for Google’s past infringement of the ’967 Patent, and present and future infringement together with interest and costs under 35 U.S.C. § 284;

D. That Google be ordered to pay prejudgment and post-judgment interest on the damages assessed;

E. That Google pay Plaintiffs enhanced damages pursuant to 35 U.S.C. § 284;

F. That Google be ordered to pay supplemental damages to Plaintiffs, including interest, with an accounting, as needed;

G. That Google be enjoined from infringing the ’967 Patent, or if its infringement is not enjoined, that Google be ordered to pay ongoing royalties to Plaintiffs for any post-judgment infringement of the ’967 Patent;

H. That this is an exceptional case under 35 U.S.C. § 285, and that Google pay Plaintiffs’ attorneys’ fees and costs in this action; and

I. That Plaintiffs be awarded such other and further relief, including equitable relief, as this Court deems just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs hereby demand a trial by jury on all issues triable to a jury.

March 27, 2025

Respectfully submitted,

By: /s/ Greg Love

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Hon. Paul D. Stickney (Ret.) (SBN 00789924)
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