

**United States Court of Appeals
for the Federal Circuit**

**GENERAL ELECTRIC COMPANY AND
GE WIND ENERGY, LLC,**
Plaintiffs/Counterclaim Defendants-Appellees,

v.

THOMAS WILKINS,
Defendant/Counterclaimant-Appellant,

AND

**MITSUBISHI HEAVY INDUSTRIES, LTD. AND
MITSUBISHI POWER SYSTEMS AMERICAS, INC.,**
Counterclaimants.

2013-1170

Appeal from the United States District Court for the
Eastern District of California in No. 10-CV-0674, Judge
Lawrence J. O'Neill.

Decided: May 8, 2014

WILLIAM F. LEE, Wilmer Cutler Pickering Hale and
Dorr LLP, of Boston, Massachusetts, argued for plain-
tiffs/counterclaim defendants-appellees. With him on the
brief were RICHARD W. O'NEILL, ELIZABETH M. REILLY,

LOUIS W. TOMPROS, and ANDREW J. DANFORD. Of counsel was ALEXANDRA COTTER BOUDREAU.

DONALD R. DUNNER, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, of Washington, DC, argued for defendant/counterclaimant-appellant. With him on the brief were THOMAS H. JENKINS, THOMAS W. WINLAND, JEFFREY C. TOTTEN, and TYLER M. AKAGI. Of counsel on the brief was ROGER D. TAYLOR, of Atlanta, Georgia.

Before LOURIE, TARANTO, and CHEN, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Thomas A. Wilkins (“Wilkins”) appeals from the decision of the United States District Court for the Eastern District of California entering declaratory judgment in favor of General Electric Company and GE Wind Energy, LLC (collectively “GE”) that Wilkins is not a co-inventor of GE’s U.S. Patent 6,921,985 (the “’985 patent”) pursuant to 35 U.S.C. § 256. *See Gen. Electric Co. v. Wilkins*, No. 10-0674, 2012 WL 5989349 (E.D. Cal. Nov. 29, 2012) (unpublished). Because Wilkins failed to prove by clear and convincing evidence that he was entitled to co-inventorship of the ’985 patent, we affirm.

BACKGROUND

Wind turbines convert wind into electrical energy that is supplied to the power grid. Random events such as lightning strikes and animal contacts can cause wires of the power grid to short, resulting in a reduction in the amount of voltage on the power grid. Such “low voltage events” can damage nearby wind turbines, either by causing the blades of a turbine to rotate out of control or by causing electric current to back up into the generator rotor of a turbine. Conventionally, wind turbines protected against those harms by disconnecting from the power grid during a low voltage event. However, as wind began

providing a greater percentage of the overall grid power, utilities began to require that wind turbines remain connected to the grid and continue to operate during a low voltage event. The ability of wind turbines to meet that requirement is known as “low voltage ride through” (“LVRT”). ’985 patent col. 1 ll. 30–34.

GE’s ’985 patent names five co-inventors who were each members of a team of GE engineers based in Salzb-
bergen, Germany that was tasked with meeting the
standard of a German utility company, which required
wind turbines to ride through voltage drops down to 15%
of nominal voltage. *Gen. Electric*, 2012 WL 5989349, at
*4.

The ’985 patent is directed to controlling key compo-
nents of a wind turbine that would allow it to remain
connected to the power grid and to safely ride through a
low voltage event. ’985 patent col. 2 ll. 24–34. The LVRT
solution described in the ’985 patent involves: (i) a blade
pitch controller that varies the angles of the wind turbine
blades to maintain safe rotation speeds, *id.* col. 5 ll. 35–
47, col. 6 ll. 32–35; (ii) a converter controller that
“guard[s] against excessive currents in the inverters” by
selectively activating and deactivating a circuit to shunt
excess current away from the turbine’s sensitive compo-
nents, *id.* col. 4 ll. 32–39, col. 4 l. 65–col. 5 l. 11, col. 5 l.
66–col. 6 l. 4, col. 6 ll. 40–49; and (iii) a turbine controller
that provides overall control of the turbine and shuts
down nonessential components during a low voltage
event, *id.* col. 4 ll. 38–43, col. 5 ll. 55–65, col. 6 ll. 36–39.

The independent claims of the ’985 patent reflect
those specific controller functions. Claims 1 and 15 are
representative and read as follows:

1. A wind turbine generator comprising: a
blade pitch control system to vary a pitch of one or
more blades; a turbine controller coupled with the
blade pitch control system; a first power source

coupled with the turbine controller and with the blade pitch control system to provide power during a first mode of operation; and an *uninterruptible power supply coupled to the turbine controller and with the blade pitch control system to provide power* during a low voltage event; wherein the turbine controller causes the blade pitch control system to vary the pitch of the one or more blades in response to the transition in response to detection of a transition from the first mode of operation.

15. A wind turbine generator comprising: a generator; a power converter coupled with the generator, the power converter having an inverter coupled to receive power from the generator, a converter controller coupled with the inverter to monitor a current flow in the inverter wherein the *converter controller is coupled to receive power from an uninterruptible power supply* during a low voltage event, and a circuit coupled with the input of the inverter and with the converter controller to shunt current from the inverter and generator rotor in response to a control signal from the converter controller.

Id. col. 6 l. 65–col. 7 l. 13, col. 7 l. 58–col. 8 l. 3 (emphases added). Each claim requires an uninterruptible power supply (“UPS”), which powers the various controllers so that they can perform their functions during a low voltage event. *Id.* col. 4 ll. 32–43, col. 5 ll. 41–44. Wilkins is not named as a co-inventor of the ’985 patent.

Wilkins began working for GE’s predecessor company Enron Wind Corporation, doing business as Zond Wind Energy Systems (“Enron”), in 1998. In the course of that employment, Wilkins was involved in adapting wind turbines to meet certain LVRT requirements at an Enron-owned wind farm in Minnesota known as Lake Benton II.

Gen. Electric, 2012 WL 5989349, at *3. After modification, the Lake Benton II wind turbines were capable of riding through voltage drops down to 70% of nominal voltage. Although those turbines incorporated a small capacitor that briefly powered one sensor during a grid outage, that capacitor did not power the converter controller during a low voltage event, nor did modification of the Lake Benton II wind turbines contemplate blade pitch control or a circuit that shunted excess current away from the generator rotor and inverter in order to achieve LVRT. *Id.* at *3–4. After GE acquired certain assets from Enron, Wilkins worked as an engineer at a GE wind turbine facility in Tehachapi, California.

It is undisputed that the German team had developed detailed specifications and concept documents of its LVRT solution by July 2002 and was planning a presentation to review the technical details, including the use of controllers powered by a UPS, which were available for download through an internal GE website. J.A. 4014–15.

Correspondence between Wilkins and two of the named inventors in spring and summer of 2002 indicates that the German team was consulting Wilkins for confirmation that their invention, which was then implemented on German wind turbines, would work with the different “60 Hz” grid requirements and turbine components used in the United States. *Gen. Electric*, 2012 WL 5989349, at *5; J.A. 2031, 3171. In particular, the correspondence revealed that the work done at Lake Benton II was not interchangeable with the specifications and requirements of the German LVRT design, and no mention was made of a UPS coupled to a converter for the purpose of LVRT. *Id.* Wilkins traveled to Germany in August 2002. Although Wilkins admitted that no documents exist for that trip, he alleged that he shared his ideas from Lake Benton II and conveyed specific elements of the ’985 patent to the German team at that time. *Gen. Electric*, 2012 WL 5989349, at *5–6; J.A. 577.

In October 2002, Wilkins and a team of GE engineers in California were tasked with developing an LVRT solution for the utility company Florida Power and Light. In the course of that work, Wilkins prepared a document entitled “Design and Cost Analysis,” in which he summarized several ideas, along with a proposal to use a UPS. J.A. 2310–21. The figures depicted in that Design and Cost Analysis “reflect . . . [w]here to place the UPS in the circuit” and show that the UPS was proposed to insulate the wind turbine from the power grid during a low voltage event by placing the UPS between the power grid and the turbine. *Id.* In that arrangement, the turbine controller and converter controller would be situated between the grid and the UPS, and therefore could only receive power from the grid during a low voltage event and not from the UPS. *Id.* Wilkins admitted that the Design and Cost Analysis does not show the UPS powering the wind turbine’s blade pitch controller, and that, although the document does discuss a shunting circuit, it is not the selectively activating and deactivating circuit of the ’85 patent. *Id.*; 598–99. Wilkins left GE later in 2002.

The ’85 patent is one of several asserted by GE against Mitsubishi Heavy Industries, Ltd. and Mitsubishi Power Systems Americas, Inc. (collectively “Mitsubishi”) in at least two lawsuits, including a patent infringement case in the United States District Court for the Southern District of Texas and an investigation before the United States International Trade Commission (“ITC”). The ’85 patent is also one of the patents at issue in an antitrust suit that Mitsubishi brought against GE in the United States District Court for the Western District of Arkansas.

In the ITC proceeding, Mitsubishi challenged the validity of the ’85 patent and hired Wilkins to search for relevant prior art. Wilkins worked approximately 1,000 hours in an effort to invalidate the ’85 patent, for which he received approximately \$200,000. *Gen. Electric*, 2012

WL 5989349, at *9; J.A. 3975. Mitsubishi also argued that the '985 patent was unenforceable based on a claim that GE intentionally failed to name Wilkins as a co-inventor. The administrative law judge ("ALJ") rejected that argument, concluding that Wilkins had co-invented the '985 patent but finding that GE did not intend to deceive the United States Patent and Trademark Office by failing to name Wilkins as a co-inventor. *See Gen. Electric Co. v. Int'l Trade Comm'n*, 685 F.3d 1034, 1036 (Fed. Cir. 2012); J.A. 8330, 8336. The ITC did not review the ALJ's finding that there was no inequitable conduct, and Mitsubishi did not challenge that determination on appeal to this court. *Id.*

Following the ITC proceedings, Wilkins averred that he retained ownership rights in the '985 patent and U.S. Patent 6,924,565 (the "565 patent"), which is directed to continuous reactive power support for wind turbine generators that GE prosecuted in Wilkins's name after he left the company. Wilkins subsequently entered into another set of agreements with Mitsubishi under which Mitsubishi paid him \$100,000 for an option to license the '985 patent and an additional \$200,000 for "consulting" work. J.A. 3961–64. In return, Wilkins agreed to "take all necessary and reasonable steps" to support Mitsubishi in actions against GE regarding the '985 patent. *Id.*

In due course, Mitsubishi exercised its option, and during licensing negotiations Wilkins's counsel demanded significant additional funds for Wilkins to "stay in the game" against GE, making clear that Mitsubishi's offer of \$200,000 was "inadequate for Wilkins to keep his place at the table." *Id.* at 5019–21. Wilkins's counsel promised that Mitsubishi would have "every ability to coordinate and manage Wilkins' involvement to maximize [Mitsubishi]'s position in the litigation" if it agreed to pay more. *Id.* Mitsubishi consequently paid Wilkins a nonrefundable licensing fee of \$1.5 million and retained an option to extend that license upon payment of an addi-

tional \$1 million. *Gen. Electric*, 2012 WL 5989349, at *10; J.A. 3967–69.

GE subsequently filed suit in the United States District Court for the Eastern District of California seeking to quiet title to the '985 and '565 patents. Wilkins counterclaimed, seeking (i) to be added as a named inventor of the '985 patent under 35 U.S.C. § 256 and (ii) a declaration that he has an ownership interest in the '985 and '565 patents. Mitsubishi intervened and also filed counterclaims seeking a declaration that Wilkins is a co-inventor and co-owner of the '985 patent.

The district court initially found that GE was likely to prevail on its claims and preliminarily enjoined Wilkins from licensing either of the patents in suit. *Gen. Electric Co. v. Wilkins*, No. 10-0674, 2011 WL 1740420 (E.D. Cal. May 5, 2011) (unpublished). After subsequently refusing four times to take an unqualified oath to tell the truth at his deposition, behavior that the court deemed “not acceptable,” Wilkins filed a declaration calling the district court “obtuse,” “overly assumptive,” and “ignorant.” *Gen. Electric Co. v. Wilkins*, No. 10-0674, 2011 WL 220240 (E.D. Cal. Jan. 21, 2011) (unpublished); J.A. 585, 5087, 9030–38, 9047. The district court eventually dismissed GE’s ownership claims on summary judgment as time-barred by the statute of limitations. *Gen. Electric Co. v. Wilkins*, No. 10-0674, 2011 WL 3163348 (E.D. Cal. July 26, 2011) (unpublished). The court then conducted a bench trial on Wilkins’s and Mitsubishi’s inventorship counterclaims and held that they had failed to establish that Wilkins co-invented the subject matter of any claim of the '985 patent. *Gen. Electric*, 2012 WL 5989349, at *1, *12.

In reaching that conclusion, the district court determined that Wilkins had undermined his own credibility. The court noted that Wilkins had received approximately \$2 million from Mitsubishi by the time of the trial and

pointed to the documentary evidence showing that Wilkins had indeed demanded those substantial payments in order for him to “stay in the game” so that Mitsubishi could “manage” him. *Id.* at *9–10. The court thus concluded that Wilkins was “biased,” “a purchased witness/party,” and “more concerned about gaining personal advantage than testifying truthfully.” *Id.* at *3, *12. The court found that Wilkins lacked credibility based on his “purposefully evasive” responses to even basic questions, noting that Wilkins was “repeatedly impeached during cross-examination, to the point where the veracity of even simple answers w[as] called into question.” *Id.* at *3. The district court judge described Wilkins as “one of the worst witnesses I have ever seen.” J.A. 842.

The district court analyzed all of the evidence presented, including: documents from Wilkins’s work at Lake Benton II, upon which Wilkins had based his primary inventorship theory; testimony from the German engineers and Wilkins’s correspondence with them regarding his 2002 work and trip; Wilkins’s Design and Cost Analysis; and GE’s prosecution of the ’985 patent. *Gen. Electric*, 2012 WL 5989349, at *3–9. Based on its credibility determination, factual findings, and review of the entire record, the court concluded that Wilkins and Mitsubishi had not carried their burden to prove inventorship by clear and convincing evidence because, “[s]imply put, there [we]re no reliable documents that verify what, if anything, Mr. Wilkins contributed to any of the claims of the ’985 patent.” *Id.* at *12.

Mitsubishi and Wilkins timely appealed. GE cross-appealed from the summary judgment orders holding that its quiet title claims were time-barred. By voluntary dismissal, the appeal was terminated as to Mitsubishi, as was GE’s cross-appeal. The record indicates that Wilkins subsequently filed related suits in the United States District Court for the Eastern District of California and the State of California Superior Court for Orange County.

In those cases, Wilkins has asserted claims for malicious prosecution and abuse of process against GE and its counsel in the district court action that is the subject of this appeal, seeking \$1.5 billion in damages from GE and its counsel based upon their assertion of breach of contract claims against Wilkins in the district court. The district court in the instant case denied Wilkins's motion for sanctions premised on the same arguments underlying those new complaints, but Wilkins did not appeal that determination. *Gen. Electric Co. v. Wilkins*, No. 10-0674, 2012 WL 5387085 (E.D. Cal. Nov. 1, 2012) (unpublished). We have jurisdiction in this appeal regarding inventorship pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

Inventorship is a question of law, which we review without deference. *Ethicon, Inc. v. U.S. Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998). We review the district court's underlying findings of fact for clear error. *Id.* Because the issuance of a patent creates a presumption that the named inventors are the true and only inventors, *id.*, the burden of showing misjoinder or non-joinder of inventors is a heavy one and must be proved by clear and convincing evidence, *Hess v. Advanced Cardiovascular Sys., Inc.*, 106 F.3d 976, 980 (Fed. Cir. 1997) (citing *Garrett Corp. v. United States*, 190 Ct. Cl. 858, 422 F.2d 874, 880 (1970)). Credibility determinations are entitled to strong deference. *See Celsis In Vitro, Inc. v. CellzDirect, Inc.*, 664 F.3d 922, 929 (Fed. Cir. 2012); *Baxter Int'l, Inc. v. McGaw, Inc.*, 149 F.3d 1321, 1330 (Fed. Cir. 1998).

Although Wilkins admits that his credibility was impeached, he asserts that those instances of impeachment only extended to immaterial and tangential points and notes that the ALJ did not criticize Wilkins's credibility in the previous ITC action. Appellant Br. 59–60. Wilkins argues that the district court erred in concluding that he

is not a co-inventor of GE's '985 patent because the court did not compare the conception described in Wilkins's Design and Cost Analysis document to the claims. Wilkins further contends that the Design and Cost Analysis is among the corroborating evidence that the court did not analyze as a whole under the rule of reason standard. Wilkins maintains that he is an inventor because that conception document meets every limitation of the independent claims; he asserts that he conceived of using a UPS as claimed for LVRT and that the claims of the '985 patent do not limit the location of the UPS.

GE responds that Wilkins's impeachment went to core issues including the work that he supposedly did and the interactions that he supposedly had with the named inventors. GE contends that the district court correctly applied the rule of reason standard, but that Wilkins did not first provide any credible testimony for the court to corroborate.

We agree with both GE and the district court that, in light of all the record evidence, Wilkins did not prove his inventorship claim by clear and convincing evidence because he did not present any credible testimony that could be corroborated. In order to guard "against courts being deceived by inventors who may be tempted to mischaracterize the events of the past through their testimony," the law requires corroboration of a putative inventor's credible testimony, the sufficiency of which is measured under a "rule of reason" standard. *Martek Biosciences Corp. v. Nutrinova, Inc.*, 579 F.3d 1363, 1374 (Fed. Cir. 2009). Therefore, as a threshold matter, in order for the rule of reason requirement to even apply there must be some evidence that a fact-finder can find reasonable; the putative inventor must first provide credible testimony that only then must be corroborated. *See, e.g., Univ. of Colo. Found., Inc. v. Am. Cyanamid Co.*, 342 F.3d 1298, 1308–09 (Fed. Cir. 2003) (rejecting inventorship theory based upon putative inventor's discredited

testimony). The very purpose of the rule of reason requirement is to verify the credibility of a putative inventor's story. *Loral Fairchild Corp. v. Matsushita Elec. Indus. Co.*, 266 F.3d 1358, 1364 (Fed. Cir. 2001); *Ethicon*, 135 F.3d at 1461; *Price v. Symsek*, 988 F.2d 1187, 1195 (Fed. Cir. 1993) (“An evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the inventor’s story may be reached.”).

The district court found that Wilkins was biased, based in part on his financial relationship with Mitsubishi. *Gen. Electric*, 2012 WL 5989349, at *3, *9–10. The court’s determination is supported by documentary evidence showing that Wilkins demanded and received substantial payments in order for him to “stay in the game” so that Mitsubishi could “manage” him. *Id.* at *9–10; J.A. 5019–21. The court also found that Wilkins further undermined his own credibility while testifying at trial because his responses to even basic questions were “purposefully evasive” and he was “repeatedly impeached during cross-examination, to the point where the veracity of even simple answers w[as] called into question.” *Gen. Electric*, 2012 WL 5989349, at *3. Based on the trial record, we find no clear error in the district court’s assessment that the substance of Wilkins’s testimony, which addressed central issues such as conception and contribution, was inconsistent and purposefully evasive. We agree with the district court’s conclusion that Wilkins left his case with no credibility.

Although Wilkins is correct that the ALJ did not criticize Wilkins’s credibility in the previous ITC action, that ITC decision was made without the benefit of the complete factual record, including the relationship between Wilkins and Mitsubishi, and without observing the shifting and inconsistent testimony that he repeatedly provided at the district court trial. The ALJ’s findings, made only in the context of an inequitable conduct analysis, are insufficient to overcome the district court’s credibility

determinations in this proceeding concerning correction of inventorship.

Accordingly, without credible testimony from Wilkins, there was nothing to corroborate. And although there was no need for the district court to assess any corroborating evidence, the court nevertheless carefully and thoroughly analyzed all of the evidence presented under the rule of reason standard and concluded that it did not contain clear and convincing evidence showing that Wilkins made any inventive contribution to the claims of the '985 patent. The district court expressly assessed witness testimony and dozens of supposedly corroborating documents, including Wilkins's Lake Benton II documents, the 2002 correspondence between Wilkins and the named German inventors, Wilkins's October 2002 Design and Cost Analysis, and documents from GE's prosecution of the '985 patent. *Gen. Electric*, 2012 WL 5989349, at *3–9. We see no error in the district court's analysis of that evidence.

Moreover, we find no merit in Wilkins's suggestion that the district court should be faulted because its opinion does not specifically address every admitted trial exhibit. A district court need not write an opinion that expressly discusses every admitted exhibit. *See Medtronic, Inc. v. Daig Corp.*, 789 F.2d 903, 906 (Fed. Cir. 1986) (recognizing that a district court need not provide a "complete discussion of all possible permutations and combinations" of the evidence because we "presume that a fact finder reviews all evidence presented unless he explicitly expresses otherwise"). But even so, the district court's opinion in this case makes clear that it did take all of the admitted evidence into account in reaching its decision. The court concluded "that the heavy burden of proof by clear and convincing evidence has not been met, and therefore that Mr. Wilkins should not be named a co-inventor of the '985 patent" after "[h]aving considered the evidence presented at trial and the parties' proposed

findings of fact and conclusions of law submitted after trial.” *Gen. Electric*, 2012 WL 5989349, at *1.

Similarly, the district court did not err simply because, after cataloging the many problems with each piece of purportedly corroborating evidence proffered by Wilkins, it did not expressly dismiss that same evidence for the second time “as a whole.” *See, e.g., Symantec Corp. v. Computer Assocs. Int’l, Inc.*, 522 F.3d 1279, 1295–96 (Fed. Cir. 2008) (rejecting inventorship claim after individually addressing flaws with each piece of corroborating evidence); *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1373 (Fed. Cir. 1998) (noting that the district court appropriately excluded evidence “lacking detail and clarity” from its rule of reason analysis). The district court considered the entire record and found that it did not support Wilkins’s inventorship claim. Wilkins does not argue that any of those factual findings were clearly erroneous, and we likewise identify no clear error. Wilkins’s argument depends on a selective reading of the record, which ignores facts that are unhelpful to his case and is in itself contrary to a proper rule of reason analysis.

Although Wilkins appears to have relied on his work at Lake Benton II when advocating his inventorship theory before the tribunals below, he suggests now that the October 2002 Design and Cost Analysis that he prepared for Florida Power and Light clearly and convincingly demonstrates his contribution to the German team’s LVRT solution and the claims of the ’985 patent, *viz.*, use of a UPS. Notwithstanding that the record is devoid of proof that the German engineers relied on anything discussed in that document as part of their conception and that Wilkins provided no credible testimony for that document to corroborate, our review of the record verifies that the district court did not clearly err in finding that the document does not disclose any of the subject matter claimed in the ’985 patent.

Record evidence confirms that Wilkins collected ideas from many different collaborating GE sources when preparing the Design and Cost Analysis. J.A. 2365–66. Wilkins himself conceded that the idea to use a UPS to perform LVRT was not novel in 2002. *Id.* at 591–92. Accordingly, if all Wilkins allegedly contributed to the '985 patent was the idea to use a UPS, then he would have contributed nothing beyond what was already known in the art. That is not sufficient to name Wilkins as a co-inventor. *Fina Oil & Chem. Co. v. Ewen*, 123 F.3d 1466, 1473 (Fed. Cir. 1997) (“[A] person will not be a co-inventor if he or she does no more than explain to the real inventors concepts that are well known and the current state of the art.”). As the district court noted, Wilkins did not invent or contribute to the use of the circuit recited in claim 15 of the '985 patent to protect the converter by shunting current away from the sensitive components of the wind turbine system. *Gen. Electric*, 2012 WL 5989349, at *6; J.A. 570–71, 596–97. And the prosecution history of the '985 patent shows that it was the combination of a UPS and such a circuit that allowed GE to overcome a prior art rejection in getting its claims allowed. J.A. 3530–31, 3779, 3782–83.

Moreover, on its face, the Design and Cost Analysis does not even depict the key feature Wilkins claims to have invented, *i.e.*, a UPS powering the wind turbine's three controllers. As discussed above, the plain language of the '985 patent claims requires the UPS to be “coupled to” the requisite controllers to provide power during a low voltage event. *See, e.g.*, '985 patent col. 7 ll. 6–8, 64–66. But the figures in Wilkins's Design and Cost Analysis depict the turbine controller and converter controller situated between the power grid and the UPS so that they could only receive power from the grid during a low voltage event and not from the UPS, which is depicted as situated to insulate the other components of the wind turbine from the grid. J.A. 2320. Furthermore, Wilkins

admitted that his Design and Cost Analysis does not show the UPS powering the wind turbine's blade pitch controller. *Id.* at 598–99. The district court thus did not clearly err in concluding that the Design and Cost Analysis did not recite the UPS limitations claimed in the '985 patent.

A co-inventor “must contribute in some significant manner to the conception or reduction to practice of the invention [and] make contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention.” *Nartron Corp. v. Schukra U.S.A. Inc.*, 558 F.3d 1352, 1356–57 (Fed. Cir. 2009). Wilkins's evidence is bereft of any such proof. The undisputed record confirms that the German inventors had already conceived of their controller-based LVRT solution before corresponding with Wilkins to discuss American grid requirements or meeting with Wilkins in Germany. *See Symantec*, 522 F.3d at 1296 (holding that evidence of discussions between named inventor and putative co-inventor concerning subject matter of claimed invention was insufficient to establish co-inventorship); *Eli Lilly & Co. v. Aradigm Corp.*, 376 F.3d 1352, 1363–64 (Fed. Cir. 2004) (same); *Hess*, 106 F.3d at 980–81 (same).

CONCLUSION

For the foregoing reasons, we conclude that the district court did not err in determining that the heavy burden of proof by clear and convincing evidence was not met, and therefore that Wilkins should not be named a co-inventor of the '985 patent. The judgment of the district court is therefore affirmed.

AFFIRMED