FOR PUBLICATION

UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

DEBORAH GETZ, individually and as a surviving heir of decedent Kristofer D.S. Thomas; RODNEY THOMAS, individually and as surviving heir of decedent, Kristopher D.S. Thomas; MARY DUFFMAN, individually and as a surviving heir of decedent, Scott E. Duffman; SOPHIA DUFFMAN, a minor, individually and as a surviving heir of decedent Scott E. Duffman, by and through her Guardian ad Litem, Mary Duffman; CHRISTINE VAUGHN, individually and as a surviving heir of decedent, Travis R. Vaughn; BRAD VAUGHN, individually and as a surviving heir of decedent, Travis R. Vaughn; HEATHER VAUGHN, individually and as a surviving heir of decedent, Travis R. Vaughn; TAYLIN VAUGHN, a minor, individually and as a surviving heir of decedent Travis R. Vaughn, by and through his Guardian ad Litem, Heather Vaughn; JILL GARBS, individually	No. 10-15284 D.C. No. 4:07-cv-06396-CW OPINION

and as a surviving heir of decedent Ryan Garbs; DOUG GARBS, individually and as a surviving heir of decedent, Ryan Garbs; PAUL WILKINSON, individually and as surviving heir of decedent Adam Wilkinson; FELICIA WILKINSON, individually and as surviving heir of decedent Adam Wilkinson; TYFFANIE WILKINSON, individually and as surviving heir of decedent Adam Wilkinson; CARSON WILKINSON, a minor, individually and as a surviving heir of decedent Adam Wilkinson, by and through his Guardian ad Litem, Tyffanie Wilkinson; ROBERT J. QUINLAN, individually and as surviving heir of decedent John Quinlan; KATHLEEN T. QUINLAN, individually and as surviving heir of decedent John Quinlan; JULIE QUINLAN, individually and as a surviving heir of decedent John Quinlan; KEELY QUINLAN, a minor, individually and as a surviving heir of decedent John Quinlan, by and through her Guardian ad Litem, Julie Quinlan; MADELINE QUINLAN, a minor, individually and as a surving heir of decedent John Quinlan, by and through her

Guardian ad Litem, Julie Quinlan; ERIN QUINLAN, a minor, individually and as a surviving heir of decedent John Quinlan, by and through her Guardian ad Litem, Julie Quinlan; HERSHEL MCCANTS, Sr., individually and as a surviving heir of Hershel McCants, Jr.; GOLDIE MURPHY, individually and as a surviving heir of decedent Hershel McCants, Jr.; SHANNON MCCANTS, individually and as a surviving heir of decedent Hershel McCants, Jr.; TREVOR MCCANTS, a minor, individually and as a surviving heir of decedent Hershel McCants, Jr., by and through his Guardian ad Litem, Shannon McCants; KYLIE MCCANTS, a minor, individually and as a surviving heir of decedent Hershel McCants, Jr., by and through her Guardian ad Litem, Shannon McCants; JORDAN LANHAM; JERRY GOLDSMITH; RYANNE NOSS, individually and as spouse of Scot Noss; TIMOTHY BRAUCH; CHRIS TRISKO; MARK DANIEL HOUGHTON; CHUCK ISAACSON; BRENDA ISAACSON,

individually and as spouse of Chuck Isaacson,
Plaintiffs-Appellants,

v.

THE BOEING COMPANY, a corporation; HONEYWELL INTERNATIONAL, INC., a corporation; GOODRICH PUMP AND ENGINE CONTROL SYSTEMS, INC., a corporation; AT ENGINE CONTROLS LTDS.; DOES, 1 through 200, inclusive,
Defendants-Appellees.

Appeal from the United States District Court
for the Northern District of California
Claudia A. Wilken, District Judge, Presiding

Argued and Submitted
March 18, 2011—San Francisco, California

Filed August 2, 2011

Before: J. Clifford Wallace, John T. Noonan, and
Richard R. Clifton, Circuit Judges.

Opinion by Judge Wallace

COUNSEL

Thomas J. Brandi, Daniel Dell'Osso (argued), and Brian J. Malloy, The Brandi Law Firm, San Francisco, California, for the appellants.

Steven S. Bell (argued), Charles W. Mulaney, and Kathleen M. O'Sullivan, Perkins Coie, Seattle, Washington, for appellee The Boeing Company.

Joanna E. Herman, James W. Huston (argued), William V. O'Connor, and Greg Reilly, Morrison & Foerster, San Diego, California, for appellee Honeywell International, Inc.

Alan H. Collier (argued) and Mark R. Irvine, Fitzpatrick & Hunt, Tucker, Collier, Pagano, Aubert, Los Angeles, California, for appellee Goodrich Pump & Engine Control Systems, Inc.

Michael A. Hession and Kevin R. Sutherland (argued), Clyde & Co., San Francisco, California, for appellee AT Engine Controls Ltd.

OPINION

WALLACE, Senior Circuit Judge:

This case arises from the tragic February 2007 crash of an Army Special Operations Aviation Regiment helicopter in Afghanistan. Plaintiffs, who include those injured and the heirs of those killed in the crash, appeal from the district court's dismissal of AT Engine Controls (ATEC) for lack of personal jurisdiction and from the court's summary judgment in favor of The Boeing Company (Boeing), Honeywell International, Inc. (Honeywell), and Goodrich Pump and Engine Control (Goodrich). We have jurisdiction pursuant to 28 U.S.C. § 1291, and we affirm.

I.

In February 2007, an Army-operated MH-47E Chinook helicopter crashed in the Kabul Province of Afghanistan. The helicopter was transporting military personnel to Bagram Airbase when it encountered snow, rain, and ice. Then, without warning, one of the Chinook's engines suddenly shut down, and the aircraft crashed. Eight servicemen were killed and fourteen were severely injured.

Two investigations into the cause of the crash revealed that it occurred after one of the helicopter's two engines suddenly flamed out. An initial Army investigation suggested that the aircraft's engine control system—the Full Authority Digital Electronic Control (FADEC)—unexpectedly shut down, causing the engine to fail. According to investigators, the engine's Digital Electronic Control Unit (DECU)—the onboard computer that controls fuel flow to the engine—malfunctioned due to some kind of electrical anomaly.

A second investigation, conducted primarily by the manufacturers of the MH-47E, suggested that the crash occurred for a different reason. According to these investigators, the

aircraft's engine flamed out because it ingested an inordinate amount of water and ice during the inclement weather. This investigation further suggested, however, that the flameout might have been avoided if the MH-47E's ignition system had been equipped with a continuous or automatic relight feature, which would have allowed the engine to restart automatically in the event of a water- or ice-induced flameout.

Six months after the crash, Plaintiffs filed an action against the contractors that designed and manufactured the allegedly defective aircraft. These contractors include: Boeing, which designed the helicopter's airframe; Honeywell, which designed and built the engines (including the ignition system); Goodrich, which designed the FADEC and was responsible for the DECU; and ATEC, a British company that designed the hardware and software for the DECU.

Initially, Plaintiffs sought relief in California state court, alleging that defendants were liable on theories of product liability, negligence, wrongful death, and loss of consortium. Boeing, however, quickly removed the action to federal court pursuant to the Federal Officer Removal Statute, 28 U.S.C. § 1442(a), which allows federal officers and agents to remove state-law claims to federal court by asserting a federal defense.

In a series of written orders, the district court rejected each of Plaintiffs' claims. First, in a March 10, 2009 order, the district court ruled that it lacked personal jurisdiction over ATEC. Then, in January 2010, the district court granted summary judgment to Boeing, Honeywell, and Goodrich (collectively the Contractors). *Getz v. Boeing Co.*, 690 F. Supp. 2d 982 (N.D. Cal. 2010). According to the district court, Plaintiffs' state-law claims against the Contractors were preempted by the government contractor defense. *Id.*

II.

[1] In resolving Plaintiffs' appeal, we turn first to the district court's dismissal of ATEC, the British company, for lack

of personal jurisdiction. According to Plaintiffs, ATEC is subject to personal jurisdiction in California pursuant to Federal Rule of Civil Procedure 4(k)(2). This Rule, which is commonly known as the federal long-arm statute, permits federal courts to exercise personal jurisdiction over a defendant that lacks contacts with any single state if the complaint alleges federal claims and the defendant maintains sufficient contacts with the United States as a whole. Rule 4(k)(2), titled "Federal Claim Outside State-Court Jurisdiction," provides:

> For a claim that arises under federal law, serving a summons or filing a waiver of service establishes personal jurisdiction over a defendant if:
>
> (A) the defendant is not subject to jurisdiction in any state's courts of general jurisdiction; and
>
> (B) exercising jurisdiction is consistent with the United States Constitution and laws.

The only question presented here is whether Plaintiffs satisfy the first part of Rule 4(k)(2). That is, do any of their claims against ATEC—pure state-law claims for product liability, negligence, wrongful death, and loss of consortium—arise under federal law?

[2] Until now, we have not examined the precise parameters of the arising-under-federal-law element of Rule 4(k)(2). We need not, however, navigate through uncharted terrain without a compass. Here, the commentary to the Rule and the well-reasoned decisions of our sister circuits agree that Rule 4(k)(2)'s reach is limited to substantive federal claims.

First, the commentary explains that Rule 4(k)(2) was enacted to "correct[ ] a gap in the enforcement of federal law." Fed. R. Civ. P. 4(k)(2), Advisory Committee Note. Under the former rules for service of process, federal courts looked to state law, even in federal question cases, whenever

a federal statute was silent about the proper mechanism for service. *Id.*; *see also Omni Capital Int'l v. Rudolf Wolff & Co.*, 484 U.S. 97, 111 (1987) (recognizing the predecessor rule's limitations). As a result, foreign defendants having sufficient contacts with the United States as a whole, but not satisfying the applicable state long-arm statute, would be "shielded from the enforcement of federal law by the fortuity" of the Fourteenth Amendment's "favorable limitation on the power of state courts." Fed. R. Civ. P. 4(k)(2), Advisory Committee Note.

Rule 4(k)(2) eliminates this anomaly. Whereas foreign defendants lacking sufficient contacts with any single state could previously avoid responsibility for civil violations of our federal laws, the revised Rule allows federal courts to exercise jurisdiction over these defendants, subject only to the limitations of the Fifth Amendment's due process clause. *Id.* In this manner, Rule 4(k)(2) provides aggrieved plaintiffs with a mechanism for vindicating their federal rights in cases involving defendants that lack single-state contacts, but who possess minimum contacts with the United States as a whole. *Id.*

However, Rule 4(k)(2) was narrowly tailored so as to avoid conflict with the Fourteenth Amendment's jurisdictional limits in cases alleging only state-law claims:

> This narrow extension of the federal reach applies only if a claim is made against the defendant under federal law. It does not establish personal jurisdiction if the *only claims are those arising under state law* or the law of another country, even though there might be diversity or alienage subject matter jurisdiction as to such claims.

Id. (emphasis added). Thus, in order to preserve the proper constitutional balance, Rule 4(k)(2) is available only to plaintiffs who allege a "federally created cause of action." 4

Charles Alan Wright & Arthur R. Miller, *Federal Practice and Procedure* § 1068.1 (3d ed. 1998).

Those circuits to address Rule 4(k)(2) have followed the approach set forth in the commentary. The Fifth Circuit, for instance, has limited the Rule to "substantive federal law claims." *World Tanker Carriers Corp. v. M/V Ya Mawlaya*, 99 F.3d 717, 722 (5th Cir. 1996). Agreeing with *World Tanker*, the First Circuit has held that a claim that finds its "roots in . . . a federal source" satisfies Rule 4(k)(2). *United States v. Swiss Am. Bank, Ltd.*, 191 F.3d 30, 45 (1st Cir. 1999); *see also Touchcom, Inc. v. Bereskin & Parr*, 574 F.3d 1403, 1413 (Fed. Cir. 2009) (to meet the arising under requirement of Rule 4(k)(2), federal law must be "a necessary element of one of the [plaintiff's] well-pleaded complaints").

[3] Based on the commentary and this authority, we hold that Plaintiffs' claims for product liability, negligence, wrongful death, and loss of consortium do not arise under federal law for purposes of Rule 4(k)(2). None of these purely state-law claims alleges any violation of a federal right and none seeks "the enforcement of federal law." *See* Fed. R. Civ. P. 4(k)(2), Advisory Committee Note. Unfortunately for Plaintiffs, their complaint simply does not assert any "substantive federal law claim" or a claim that finds its "roots in a federal source." *See World Tanker Carriers*, 99 F.3d at 722; *Swiss Am. Bank*, 191 F.3d at 45.

[4] Despite the non-federal basis of their complaint, Plaintiffs insist that their claims arise under federal law because the Contractors removed this action pursuant to the Federal Officer Removal Statute. *See* 28 U.S.C. § 1442(a) (permitting federal officers and agents to remove an otherwise state-law action to federal court by raising a federal defense). According to Plaintiffs, their claims became substantively federal when the Contractors asserted a federal defense in their removal petition. The problem, at least for Plaintiffs, is that the Supreme Court's decision in *Arizona v. Manypenny*, 451

U.S. 232 (1981), forecloses their argument. There, the Court explained that "the invocation of removal jurisdiction by a federal officer does not revise or alter the underlying law to be applied." *Id.* at 242. Section 1442(a) confers "a purely derivative form of jurisdiction, neither enlarging nor contracting the rights of the parties." *Id.* Hence, the Contractors' decision to assert a federal defense merely provides us with subject-matter jurisdiction over this action. *See Mesa v. California*, 489 U.S. 121, 136 (1989) (section 1442(a) "serves to overcome the 'well-pleaded complaint' rule[,] which would otherwise preclude removal even if a federal defense were alleged").

[5] Here, the "underlying law to be applied" is California state law. The only federal interest at issue—the Contractors' eligibility for a federal defense—has no bearing on Plaintiffs' ability to vindicate a *federal* right and it does not constitute an essential element of Plaintiffs' well-pleaded complaint. *See Cal. Shock Trauma Air Rescue v. State Compensation Ins. Fund*, 636 F.3d 538, 541 (9th Cir. 2011). The existence of a federal defense does not transform purely state-law claims into "federally created cause[s] of action." *See* Wright & Miller, *supra*, § 1068.1 (the reach of Rule 4(k)(2) is limited to substantive federal-law claims). Accordingly, Rule 4(k)(2) does not apply. *See Manypenny*, 451 U.S. at 242.

As for Plaintiffs' allegations that ATEC might nonetheless have minimum contacts with California, which they assert independently of their reliance on Rule 4(k)(2), we reject Plaintiffs' contention that the district court should have permitted additional jurisdictional discovery on this issue. "[W]here a plaintiff's claim of personal jurisdiction appears to be both attenuated and based on bare allegations in the face of specific denials made by the defendants, the Court need not permit even limited discovery." *Pebble Beach Co. v. Caddy*, 453 F.3d 1151, 1160 (9th Cir. 2006) (internal quotation marks omitted). Here, Plaintiffs fail to identify any specific facts, transactions, or conduct that would give rise to personal juris-

diction over ATEC in California. In light of their purely speculative allegations of attenuated jurisdictional contacts, the district court did not abuse its discretion when it denied Plaintiffs' request for further discovery. *See id.*

III.

[6] We turn now to the main issue presented in this appeal: whether Plaintiffs' state-law claims are barred by the government contractor defense. This defense protects government contractors from tort liability that arises as a result of the contractor's "compli[ance] with the specifications of a federal government contract." *In re Hanford Nuclear Reservation Litig.*, 534 F.3d 986, 1000 (9th Cir. 2008); *see also Rodriguez v. Lockheed Martin Corp.*, 627 F.3d 1259, 1265 (9th Cir. 2010) (describing the defense as a shield to tort liability).

The Supreme Court established the framework of the government contractor defense in *Boyle v. United Technologies Corp.*, 487 U.S. 500 (1988). There, the Court explained that procurement of military equipment involves "uniquely federal interests" that sometimes preempt a plaintiff's product liability claims against government contractors. *Id.* at 504. To invoke the defense successfully, the contractor must establish three elements: "(1) the United States approved reasonably precise specifications; (2) the equipment conformed to those specifications; and (3) the supplier warned the United States about the dangers in the use of the equipment that were known to the supplier but not to the United States." *Id.* at 512. In their appeal, Plaintiffs raise several challenges to each of these elements.

A.

[7] Under *Boyle*'s first element, a contractor must demonstrate that the government "approved reasonably precise specifications." *Id.* As we explained in *Snell v. Bell Helicopter Textron, Inc.*, the government's approval of a particular speci-

fication must be more than a cursory "rubber stamp" approving the design. 107 F.3d 744, 748 (9th Cir. 1997). Rather, approval must result from a "continuous exchange" and "back and forth dialogue" between the contractor and the government. *Butler v. Ingalls Shipbuilding, Inc.*, 89 F.3d 582, 585 (9th Cir. 1996). When the government engages in a thorough review of the allegedly defective design and takes an active role in testing and implementing that design, *Boyle*'s first element is met. *Id.*

Plaintiffs argue that the necessary specifications are lacking with respect to the following design features of the MH-47E Chinook: (i) the engine's ignition system, (ii) the FADEC-DECU, and (iii) the aircraft itself.

1.

[8] According to Plaintiffs, the ignition system was defective because it was manufactured without a continuous relight function, which would have allowed the engine to restart automatically in the event of a water-induced flameout. Upon careful review of the record, we are confident that the United States Army approved reasonably precise specifications for this aspect of the MH-47E's ignition system, which was manufactured by Honeywell.

Under the terms of its contract with the Army, Honeywell was required to construct the MH-47E's engine pursuant to "Military Specification AV-E-8593D." This provision, which is titled "General Specification for Engines, Aircraft, Turboshaft, and Turboprop," provides design criteria, performance expectations, and mandatory quality assurance testing for all military aircraft. Among other things, the Army's specification includes diagrams and drawings for engine controls; engine configuration requirements; and tests for the engine's ignition system. Specification AV-E-8593D also required Honeywell to submit a proposed "complete engine specification" for governmental approval.

Honeywell did just that when it submitted its Prime Item Development Specifications to the Army. These specifications contain numerous drawings, figures, and schematics for the engine used in the MH-47E Chinook. They also provide a detailed description of the allegedly defective ignition system. Most importantly, at least for purposes of resolving this appeal, Honeywell's specifications explicitly state: "Continuous duty ignition capability is not provided." Hence, the specifications explicitly identify the "design of the particular feature at issue" and expressly observe that feature's absence. *See Snell*, 107 F.3d at 747. In this sense, Honeywell's specifications describe, in reasonable detail, the design feature alleged to be defective. *See id.*; *Boyle*, 487 U.S. at 512.

[9] It is also clear that the Army's approval of this specification resulted from careful deliberation, not a "rubber stamp." *See Snell*, 107 F.3d at 748. The undisputed record provides that the Aviation Engineering Directorate—which is charged with evaluating designs, performing quality assurance tests, and approving aviation equipment—specifically reviewed Honeywell's design analyses, reports, and test plans, and attended multiple formal design meetings. Members of the Directorate also attested that the government was well aware of the availability of an automatic relight system, but chose to forego that technology. This type of "continuous exchange" and "back and forth dialogue" is what is necessary to demonstrate that the Army exercised its judgment in approving Honeywell's design for the ignition system. *Butler*, 89 F.3d at 585.

We also reject the notion that the approved specifications constitute mere performance criteria, instead of design specifications. *See In re Haw. Fed. Asbestos Cases*, 960 F.2d 806, 813 (9th Cir. 1992) (to qualify for the government contractor defense, approved specifications must do more than merely identify "a certain level of performance"). Although some of the specifications identified by the parties are performance based—for example, the "Ignition System Performance"

specification—the key specifications at issue pertain to the MH-47E's design. In particular, the provision identifying the absence of "continuous ignition capability" describes a particular aspect of the ignition system's design, not a performance characteristic.

2.

[10] The Army also approved reasonably precise specifications for the design of the FADEC-DECU, which, again, is the engine control system and computer that allegedly malfunctioned immediately prior to the February 2007 crash. According to the undisputed record, Goodrich—the contractor directly responsible for this component—provided Army personnel with lengthy and detailed design specifications describing both the FADEC (the control system as a whole) and the DECU (the FADEC's onboard computer). Among other things, these specifications include complex diagrams and design drawings of the FADEC, a description of fault monitoring procedures for the DECU, algorithms for troubleshooting, and a system for engine fail detection.

[11] Undisputed affidavit evidence also establishes that the Army carefully reviewed these specifications, scrutinized their content, and evaluated the reported test results before approving Goodrich's specifications. Army engineers attended regular technical meetings pertaining to the FADEC-DECU throughout the procurement process. These engineers also issued formal requests for information pertaining to various design aspects of the FADEC system and called periodic meetings to discuss and test the fuel control design, software design, and the design of the electronics (that is, the DECU). At one point, Army engineers even rejected the "FADEC control system specification," insisting that Goodrich address certain technical concerns. Such critical and substantive review ultimately culminating in approval is the type of careful consideration necessary to demonstrate that the government made

a discretionary decision when it approved the FADEC-DECU. *See Butler*, 89 F.3d at 585.

Plaintiffs present no contrary evidence. Instead, they rely heavily on a single statement contained in Goodrich's approved specifications for the FADEC-DECU:

> Specific implementations used to describe the functional requirements throughout this document are for informational understanding only. Actual implementations used to meet these requirements will be at the discretion of the designer unless specifically stated otherwise.

According to Plaintiffs, the government could not have exercised actual discretion over the design because that discretion was left to Goodrich. There are at least two flaws in Plaintiffs' argument. First, the statement at issue cannot reasonably be construed as a broad grant of discretion over the final product. Rather, discretion was limited to "implementation" of the specific design requirements contained within the approved specifications and thus does not defeat the government contractor defense. *See, e.g.*, *McKay v. Rockwell Int'l Corp.*, 704 F.2d 444, 450 (9th Cir. 1983) (government contractor defense may still apply if the specifications leave some "discretion to the supplier in the formulation of the product's design"); *Oliver v. Oshkosh Truck Corp.*, 96 F.3d 992, 999 (7th Cir. 1996) ("[T]he fact that Oshkosh may have retained some discretion to position the fuel tanks and exhaust system *within the envelope permitted by the specifications*, standing alone, [does not] defeat the government contractor defense" (emphasis added)). Second, and perhaps more importantly, the evidence discussed earlier establishes that the Army carefully scrutinized, tested, and made necessary changes to the FADEC-DECU. This type of exchange and scrutiny is sufficient to demonstrate that the government exercised judgment in approving this product's design. *See Butler*, 89 F.3d at 585.

[12] Contrary to Plaintiffs' view, it makes no difference, for purposes of our analysis, that a similar engine control system had previously been developed for Great Britain's Royal Air Force. Although *Boyle* makes the government contractor defense inapplicable when "a federal procurement officer orders, by model number, a quantity of stock helicopters that happen to be equipped with" a particular design feature, 487 U.S. at 509, this defense does not require the government to create the design or the specifications. As long as the United States makes "a significant policy judgment" in approving the design, nothing precludes the government from procuring designs and products that were initially developed for other nations. *Id.* at 513; *see also Carley v. Wheeled Coach*, 991 F.2d 1117, 1125 (3d Cir. 1993) ("[I]t is necessary only that the government approve, rather than create, the specifications").

If we were to hold otherwise, the potential for increased liability could dissuade contractors from providing the United States with sophisticated military equipment that they had initially designed for another nation's armed forces. This ultimately would put the United States military at a competitive disadvantage: either the government would be unable to obtain necessary equipment or it would be forced to pay higher prices to offset the contractor's increased risk of liability. Therefore, we are persuaded by the Eleventh Circuit's recent decision in *Brinson v. Raytheon Co.*, 571 F.3d 1348 (11th Cir. 2009). There, the court imposed the government contractor defense even though the product design had been patented before it was approved by the United States Air Force. *Id.* at 1357. The court did so because it was clear that the Air Force carefully "considered" and "reviewed" the design prior to approval and implementation. *Id. Boyle* does not require more than this.

3.

While they do not identify any additional defect, Plaintiffs argue that "the helicopter as a whole" was defective. As far

as we can tell, this argument is premised on the theory that Boeing, which was contracted to configure the aircraft, delivered a final product containing a defective ignition system and/or FADEC-DECU. We reject Plaintiffs' argument for the reasons expressed above: the government approved reasonably precise design specifications for both of these component parts.

B.

[13] We turn now to the second element of the government contractor defense. That element requires a defendant to establish that the product conformed with approved specifications. *Boyle*, 487 U.S. at 512. Until now, we have not provided a detailed examination of this requirement. In *Snell*, for instance, we refused to reach the conformity question because the contractor did not establish *Boyle*'s first element as a matter of law. 107 F.3d at 748-49. Other circuits, however, have extensively examined the conformity element, and their analysis provides persuasive guidance.

[14] Following our sister circuits' lead, we hold that the operative test for conformity with reasonably precise specifications turns on whether "the alleged defect . . . exist[ed] independently of the design itself." *Miller v. Diamond Shamrock Co.*, 275 F.3d 414, 421 (5th Cir. 2001) (internal alteration omitted) (internal quotation marks omitted). "To say that a product failed to conform to specifications is just another way of saying that it was defectively manufactured." *Harduvel v. Gen. Dynamics Corp.*, 878 F.2d 1311, 1321 (11th Cir. 1989). Therefore, absent some evidence of a latent manufacturing defect, a military contractor can establish conformity with reasonably precise specifications by showing "[e]xtensive government involvement in the design, review, development and testing of a product" and by demonstrating "extensive acceptance and use of the product following production." *Kerstetter v. Pac. Scientific Co.*, 210 F.3d 431, 435-36 (5th Cir. 2000).

[15] Upon careful review of the record, we conclude that the MH-47E conformed with the approved specifications for both the ignition system and the FADEC-DECU. The government invested years in reviewing, developing, and testing both the MH-47E and its engine. When the finished helicopter was delivered, Army officials again carefully examined the engine, inspected the aircraft's component parts, conducted test flights, and administered rigorous tests and examinations to ensure conformity. Army officials then executed a DD Form 250—a Material Inspection and Receiving Report—for both the ignition system and the FADEC-DECU. Through that form, the Army officially certified "that all articles delivered [were] inspected and found to conform in all respects . . . to all applicable blueprints, specifications, and standards." Because Plaintiffs do not present any evidence of a latent manufacturing defect that was undiscovered at the time of acceptance, the government's careful scrutiny and subsequent certification of the MH-47E provide sufficient proof of conformity. *See Miller*, 275 F.3d at 421; *Kerstetter*, 210 F.3d at 435-36.

In an effort to overcome summary judgment, Plaintiffs place great emphasis on a post-accident email addressed to the Contractors. In it, an Army officer expressed frustration with the Contractors over their failure to provide a promised "input/output table" to Army personnel. Apparently, this table would have measured "the electrical parameters used by the DECU to control" the engines on the MH-47E. The email states:

> For the record, the request for the I/O table was made because a FADEC/DECU Electrical Interface Control Document was apparently never written during the design, development, and testing of the FADEC System. Action item 33/34 directly requested that Boeing and Honeywell provide the Aircraft to DECU and the Engine to DECU I/O, respectively, contractually required to be delivered

> back in 1988. We are still waiting for the [sic] a copy of the data delivered by either company that met that specific contractual obligation.

This email leaves unclear how the absence of a 1988 I/O table has any bearing on whether the DECU conformed with reasonably precise design specifications. *See Boyle*, 487 U.S. at 512. Significantly, nothing in the record explains how the I/O data might have implicated a manufacturing aberration in the DECU's component parts that existed "independently of the design itself." *See Miller*, 275 F.3d at 421. Thus, while Plaintiffs suggest that the I/O data *might* have provided evidence of an "electrical anomaly," the notion that the measurements would have identified a deviation from the approved design specifications is speculative and thus insufficient to defeat summary judgment. *See Nelson v. Pima Cmty. Coll.*, 83 F.3d 1075, 1081-82 (9th Cir. 1996) (a litigant may not rely on mere speculation and conjecture to avoid summary judgment).

In addition, while the MH-47E Chinook's engine obviously did not perform like it was supposed to—the aircraft's engine stalled midflight—this does not preclude the Contractors from establishing the defense. Here, Plaintiffs are quick to point out that the government contracted for a helicopter that would have maintained flight in the adverse weather conditions encountered by the MH-47E. Likewise, they assert that "the failure or shutdown of one engine" was not supposed to "compromise the remaining engine or *safety of flight systems*." The problem for Plaintiffs is that "[n]onconformance with a specification means more than that the ultimate design feature does not achieve its intended goal." *Kerstetter*, 210 F.3d at 435; *see also Oliver*, 96 F.3d at 1000 (mere allegation of nonperformance is insufficient).

[16] The government contractor defense does not depend upon satisfaction of some general performance goal. Otherwise, "[a] product involved in a design-induced accident would, as a definitional matter, always be deemed not to com-

ply with such generalities since no performance specifications approved by the government would purposely allow a design that would result in an accident." *Kleemann v. McDonnell Douglas Corp.*, 890 F.2d 698, 703 (4th Cir. 1989). For the defense to have any substance, "[n]onconformance to precise specifications must mean more than that the design does not work in compliance with some 'general admonition against an unwanted condition.' " *Id.* at 703, *quoting Harduvel*, 878 F.2d at 1319 n.3. Here, the Contractors present undisputed evidence that the ignition system and the DECU conformed with the reasonably precise design specifications approved by the Army. That is the end of the matter for purposes of *Boyle*'s test for conformity.

C.

[17] The final element of the government contractor defense requires government contractors to warn the United States "about the dangers in the use of the equipment that were known to the [contractor] but not to the United States." *Boyle*, 487 U.S. at 512. Under this element, "a government contractor is only responsible for warning the government of dangers about which it has actual knowledge." *Kerstetter*, 210 F.3d at 436 (internal quotation marks omitted).

[18] We conclude that the Contractors satisfied this final requirement. With respect to the potential for a water- or ice-induced flameout, it is clear that the Army was already aware of this particular risk. As Honeywell points out, a 1990 Army Field Manual stated explicitly that "[t]urbine engines sometimes tend to flameout" and that "ingestion of ice broken loose at the engine inlet may cause such a situation." In addition, the Army was well aware of an automatic relight feature to overcome this problem. The Chief of the Aviation Engineering Directorate, which approved the design specifications for the MH-47E, stated in his undisputed affidavit that "automatic re-light . . . technology has always been known to the Army, but the Army elected not to include it" on the Chinook

line of helicopters. Moreover, because the approved specifications affirmatively acknowledged the absence of a continuous relight function, Plaintiffs cannot seriously argue that the Army was unaware of that component's existence. *See Boyle*, 487 U.S. at 512.

Plaintiffs nonetheless insist that issues of fact remain because the Army had never heard of an engine *actually* flaming out due to water or ice ingestion. The problem for Plaintiffs is that the Contractors were equally unaware of any prior incidents. At most, Plaintiffs' evidence suggests that the Contractors should have been aware of the alleged defect. *Boyle*, however, does not require a contractor to warn about dangers of which it merely should have known. 487 U.S. at 512; *Kerstetter*, 210 F.3d at 436.

To the extent that the crash may have occurred as a result of an electrical anomaly with the FADEC-DECU, summary judgment is likewise appropriate. According to Plaintiffs, the Contractors should have warned of this potential defect because they were aware of other Chinook aircraft that had experienced engine anomalies prior to the February 2007 crash. A review of these other incidents, however, makes clear that all of these aircraft were MH-47Es. Because the MH-47E is operated exclusively by the United States Army, government personnel were necessarily aware of the potential problem prior to the crash. Again, *Boyle* does not require government contractors to warn of dangers that were already known to the United States. 487 U.S. at 512.

IV.

[19] Our analysis to this point leaves us with just one additional issue to resolve: whether Plaintiffs can state a claim against the Contractors for allegedly violating their state-law duty to warn of dangers of which the Contractors should have known. Although federal courts, including ours, have unanimously held that the government contractor defense may pre-

empt these types of claims, a contractor cannot defeat a failure-to-warn claim simply by establishing the elements of the *Boyle* defense as it applies to design and manufacturing defect claims. *See e.g.*, *Butler*, 89 F.3d at 586. Rather, the contractor must show that it "act[ed] in compliance with 'reasonably precise specifications' imposed on it by the United States" in deciding whether "to provide a warning." *Id.* (internal alteration omitted). As the Seventh Circuit has explained:

> [W]hen state law would otherwise impose liability for a failure to warn, that law can be displaced when the contractor can show that: (1) the government exercised its discretion and approved certain warnings; (2) the contractor provided the warnings required by the government; [and] (3) the contractor warned the government about dangers in the equipment's use that were known to the contractor but not to the government.

Oliver, 96 F.3d at 1003-04. This means that the contractor must demonstrate that the government "approved reasonably precise specifications" thereby limiting the contractor's "ability to comply with [its] duty to warn." *Snell*, 107 F.3d at 749 (internal quotation marks omitted).

According to Plaintiffs, the Contractors violated their duty to warn because they knew or should have known of an electrical problem with the FADEC-DECU, but failed to provide timely warnings to the operators of the MH-47E Chinook.

[20] It is beyond dispute that the "government exercised its discretion" when it selected relevant warnings for the MH-47E. *Oliver*, 96 F.3d at 1003. Here, the complete set of warnings is contained in the helicopter's Operator's Manual. That Manual sets forth specific "warnings," "emergency procedures," and "critical instructions" for the aircraft. Significantly, based on the government's agreement with the Contractors, the Army was fully responsible for the Opera-

tor's Manual and its contents. Thus, because the Army, not the Contractors, selected which warnings to include in the Manual, Plaintiffs' contention that the government did not exercise discretion over the content of these warnings is meritless. Where "the government chooses its own warnings, the contractor has certainly fulfilled [*Boyle*'s] first condition." *Id*. at 1004; *see also Tate v. Boeing Helicopters*, 55 F.3d 1150, 1157 (6th Cir. 1995) ("[W]here the government goes beyond approval and actually determines for itself the warnings to be provided, the contractor has surely" demonstrated that "the government exercised its discretion").

The Contractors easily satisfy the second and third elements of the government contractor defense as it applies to Plaintiffs' state-law failure to warn claims. The second element—providing the warning required by the government—is satisfied by the Contractor's delivery of the Operator's Manual. As for the final element—whether the Contractors "warned the government about dangers in the equipment's use that were known to the [C]ontractor[s] but not to the government"—this element is satisfied for the reasons explained earlier in connection with Plaintiffs' design and manufacturing defect claims: the Contractors and the government had equal awareness of the allegedly undisclosed risks. *See Oliver*, 96 F.3d at 1004.

[21] We are not persuaded by Plaintiffs' suggestion that our decisions in *Butler* and *Hawaii Federal Asbestos* limit the defense to cases in which the government specifically forbids warnings altogether or to instances where the government explicitly dictates the content of the warnings adopted. These cases only require that governmental approval (or disapproval) of particular warnings "conflict" with the contractor's "duty to warn under state law." *Butler*, 89 F.3d at 586; *see also Haw. Fed. Asbestos*, 960 F.2d at 813 (rejecting the defense where the government's specifications were silent about warnings). To read these cases as limiting preemption to those instances where the government forbids additional

warning or dictates the precise contents of a warning would be inconsistent with the Court's decision in *Boyle*. *See Oliver*, 96 F.3d at 1004 n.8 (rejecting plaintiff's argument that *Butler* and *Hawaii Federal Asbestos* could be interpreted as imposing such a "rigid" rule). *Boyle* makes clear that government discretion, rather than dictation, is the standard. 487 U.S. at 512-13. Accordingly, given that the Army considered, reviewed, and determined which warnings to provide, the government's exercise of discretion necessarily "conflicts" with the Contractors' "duty to warn under state law." *See Butler*, 89 F.3d at 586.

V.

Finally, we address two evidentiary issues. First, we hold that the district court did not abuse its discretion in declining Plaintiffs' request for additional discovery pursuant to Federal Rule of Civil Procedure 56(f). Here, Plaintiffs failed to "proffer sufficient facts to show that the evidence sought exists, and that it would prevent summary judgment." *Blough v. Holland Realty, Inc.*, 574 F.3d 1084, 1091 n.5 (9th Cir. 2009) (internal quotation marks omitted) (rejecting similar arguments asserted pursuant to Rule 56(f)).

Similarly, the district court did not abuse its discretion by entering summary judgment based on the MH-47E's Operator's Manual, which the Contractors submitted for the first time in their reply to the motion for summary judgment. According to Plaintiffs, the district court was not permitted to consider this evidence without first giving them an opportunity to respond. *Provenz v. Miller*, 102 F.3d 1478, 1483 (9th Cir. 1996) ("Where new evidence is presented in a reply to a motion for summary judgment, the district court should not consider the new evidence without giving the non-movant an opportunity to respond" (internal alteration omitted) (internal quotation marks omitted)). However, by failing to object to or otherwise challenge the introduction of the Operator's Manual in the district court, Plaintiffs have waived any challenge on

the admissibility of this evidence. *See Yamashita v. Territory of Guam*, 59 F.3d 114, 117 (9th Cir. 1995) (holding a similar evidentiary challenge as waived).

VI.

We have considered each of Plaintiffs' arguments challenging the district court's dismissal of ATEC for lack of personal jurisdiction and its summary judgment in favor of the Contractors. None of these arguments are persuasive.

Finally, because the government contractor defense bars each of Plaintiffs' state-law claims, we need not consider the Contractors' alternative argument—based on the combatant activities exception—for upholding the district court's summary judgment. *See Morse v. Frederick*, 551 U.S. 393, 431 (2007) ("[T]he cardinal principle of judicial restraint is that if it is not necessary to decide more, it is necessary not to decide more" (Breyer, J., concurring in the judgment in part and dissenting in part) (internal quotation marks omitted)).

AFFIRMED.