

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

QD OXFORD UK LIMITED, and
QUANTUM DESIGN INTERNATIONAL INC.,

Petitioners,

v.

MAYBELL QUANTUM INDUSTRIES, INC.,

Patent Owner.

IPR2026-00291
U.S. Patent No. 12,313,320

**PETITIONERS' OPPOSITION TO
PATENT OWNER'S DISCRETIONARY DENIAL BRIEF**

PETITIONERS' UPDATED LIST OF EXHIBITS

Exhibit	Description
Ex. 1001	U.S. Patent No. 12,313,320 (the “’320 Patent”)
Ex. 1002	Declaration of Andrew Casey, Ph.D.
Ex. 1003	Principles of dilution refrigeration: A brief technology guide, Oxford Instruments (2015)
Ex. 1004	Prosecution History of the ’320 Patent
Ex. 1005	U.S. Provisional Application No. 63/319,428
Ex. 1006	U.S. Provisional Application No. 63/219,795
Ex. 1007	U.S. Application Publication No. 2012/0102975 (“Garside”)
Ex. 1008	<i>Dilution Refrigeration of Multi-Ton Cold Masses</i> (“Wikus”)
Ex. 1009	U.S. Patent No. 9,816,750 (“Batey”)
Ex. 1010	U.S. Patent Application Publication No. 2009/0113899 (“Dain”)
Ex. 1011	U.S. Patent Application Publication No. 2022/0221105 (“Chow”)
Ex. 1012	International Patent Application Publication No. WO2020/182671 (“PWS”)
Ex. 1013	Certified English Translation of PWS
Ex. 1014	Integration of Superconducting Magnets with Cryogen-Free Dilution Refrigerator Systems, <i>Cryogenics</i> 49 (2009) 727-734
Ex. 1015	Confirmation by Technische Universität Wien Library
Ex. 1016	EURECA Conceptual Design Report, <i>Physics of the Dark Universe</i> (2014) 3:41-74
Ex. 1017	<i>Curriculum Vitae</i> of Andrew Casey, Ph.D.
Ex. 1018	<i>Sotera</i> Stipulation
Ex. 1019	Stipulation and Order to Substitute Parties
Ex. 1020	Docket Navigator, Judge Noreika Patent Case Time-to-Trial Statistics
Ex. 1021	Declaration of Karen De Los Reyes, CPA, CMA, MBA

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I. INTRODUCTION

Patent Owner's discretionary denial argument is built on rhetoric, not record evidence. It dresses up ordinary features of IPR practice, such as a timely petition, alternative preamble analysis, and obviousness combinations using secondary references, as supposed gamesmanship. Patent Owner's narrative cannot overcome the record that confirms that the Petition should be considered on its merits. Indeed, the Petition was timely filed, challenging a patent less than ten months after it issued. The pending district court case is still in the pleading stage, with no schedule and no trial date. Since the patent has yet to be substantively addressed in the district court proceeding, there has been no wasted effort and, contrary to the suggestion by Patent Owner, Petitioners have taken no inconsistent claim construction positions in the district court. And to address the risk of future duplication of effort, Petitioners concurrently submit a broad *Sotera* stipulation. The Director's policies favoring early-filed petitions challenging recently-issued patents apply fully to this Petition. The Director should reject Patent Owner's rhetoric and consider the Petition on the merits.

Patent Owner's claim construction argument attempts to create a *Revvo* issue where none exists by attributing to Petitioners a construction they never advanced. Petitioners did not offer competing constructions of the phrase "dilution refrigerator," and Patent Owner failed to identify any inconsistent district court

claim construction position. Rather, Petitioners argued that the preamble is not limiting, but in case the Board finds otherwise, showed that the prior art nevertheless discloses the preamble. That is ordinary petition practice, not gamesmanship. Patent Owner's arguments about a so-called Petitioners' "third construction" is based on the false premise that Petitioners contend a "dilution refrigerator" means any refrigerator. But this construction was never asserted and is simply a strawman based on a misreading of Petitioners' obviousness argument. Contrary to Patent Owner's rhetoric, the Petition never argues a "dilution refrigerator" is described in Dain, a secondary reference in an obviousness combination. Instead, the Petition relies on the primary references, Batey and Chow, to supply the dilution refrigerator for the combination, while Dain supplies structural teachings regarding housing geometry, planar surfaces, openings, doors, and seals, all common features of refrigeration equipment.

Patent Owner's remaining arguments fare no better. A timely IPR is not gamesmanship simply because Patent Owner would have preferred that Petitioners had filed a PGR. And a newly-issued patent asserted in litigation almost immediately after issuance does not create settled expectations. Further, Patent Owner's domestic manufacturing does not create immunity from AIA review. Otherwise, a foreign company sued for alleged infringement of a U.S. patent would be categorically barred from using the very IPR process Congress created to test

the validity of U.S. patents. Nothing in the statute supports that outcome. Having chosen to seek the protections afforded by the U.S. patent system in district court, Patent Owner cannot now reasonably argue that review by the U.S. Patent Office should be foreclosed. This is especially true here given that Oxford Instruments' nanoscience business was recently acquired by the Petitioner, Quantum Design, a successful decades old U.S. company based in San Diego, California with substantial U.S. operations.

The Director should deny Patent Owner's request for discretionary denial and address institution in the ordinary course.

II. THE *FINTIV* FACTORS FAVOR INSTITUTION

A. A *Sotera* Stipulation Eliminates Any Meaningful Concern About Overlap With the Pending District Court Case

Patent Owner's principal efficiency argument rests on the absence of a *Sotera* stipulation. Regardless of whether Petitioner submits a *Sotera* stipulation, if the IPR is instituted and results in a final written decision, Petitioners would be estopped under 35 U.S.C. § 315(e) from pursuing invalidity grounds that were raised or reasonably could have been raised in this proceeding. Contrary to Patent Owner's complaints regarding inefficiencies and "overlapping validity challenges in the district court proceeding," this statutory estoppel would limit any overlap.

The overlap will be minimal because the final written decision is projected to issue in September 2027, whereas the median time-to-trial before Judge Noreika

in a patent case is 35 months, meaning the as-yet-unscheduled trial in the district court is unlikely to occur before approximately June 2028. *See* Ex. 1020 (Docket Navigator, Judge Noreika Patent Case Time-to-Trial Statistics); *see also* March 24, 2025 USPTO Memorandum at 3 (“[I]n applying *Fintiv*, the Board may consider any evidence ... that bears on the proximity of the district court’s trial date ... including median time-to-trial statistics ...”). The trial is likely to be even later because the district court proceedings have yet to get meaningfully underway with no initial case management conference having been conducted, and with no case schedule in place or any discovery requests served. With the final written decision projected to issue at least *nine* months, if not more, before trial in the district court proceeding, statutory estoppel will limit any meaningful overlap between the two proceedings.

Nevertheless, Petitioners concurrently submit a broad *Sotera* stipulation with this opposition. In *Tesla, Inc. v. Bulletproof Property Management, LLC*, the Director rejected patent owner’s request for discretionary denial and found that “[t]he absence of a scheduled trial date and Petitioner’s broad stipulation reduces the concern of inconsistent outcomes or significant duplication of efforts ... allow[ing] this AIA review to function as an alternative to the co-pending litigation.” IPR2026-00204, Paper 14 at 2-3 (Dir. June 15, 2026) (designated informative). Here, as in *Tesla*, the nascent stage of the district court litigation and

Petitioners' broad *Sotera* stipulation both weigh in favor of referral of this case for consideration of the merits.

If the IPR is instituted, Petitioners will not assert in the district court litigation that any challenged claim is invalid on any ground that was raised or reasonably could have been raised in this proceeding. Ex. 1018. Nor will Petitioners assert that any challenged claim is invalid on any ground based on a combination of system art with any prior art reference asserted as the basis of an invalidity ground in this proceeding. *Id.* Petitioners' broad stipulation further reduces any potential overlap between this IPR and the Delaware litigation and ensures that this proceeding remains an efficient vehicle for resolving the validity challenge presented in the Petition. *See, e.g., Stingray Grp. Inc. v. Hernandez-Mondragon*, IPR2025-00349, Paper 19 at 7-8 (June 13, 2025) (finding Petitioner's *Sotera* stipulation weighed strongly against discretionary denial); *Liberty Energy Servs. v. U.S. Well Servs.*, IPR2025-00139, Paper 14 at 14 (June 11, 2025) (same).

Patent Owner may argue that the stipulation is late, but the relevant inquiry is practical, not formalistic. The stipulation has been submitted to the Director before institution, before any discretionary denial decision, and before any district court scheduling order or trial date. The guidance Patent Owner cites encourages stipulations to be filed as soon as practicable, but it does not impose the strict timing or draconian forfeiture rule advocated by Patent Owner.

Moreover, Patent Owner's reliance on *Samsung Electronics Co. v. Netlist, Inc.* is misplaced. There, the Petitioner filed its stipulation *two weeks after* it filed its opposition to Patent Owner's Request for Discretionary Denial. IPR2026-00018, Paper 20 at 3 (Dir. Apr. 28, 2026). Here, by contrast, the stipulation has been submitted to the Director in connection with Petitioners' opposition brief and may be relied upon to support denial of Patent Owner's request. *See, e.g., Wybotics, Co. Ltd. v. Zodiac Pool Sys. LLC*, IPR2026-00158, Paper 12 at 4 (Dir. May 6, 2026) (denying Patent Owner's request for discretionary denial, noting Petitioner's *Sotera* stipulation submitted with its opposition is binding on Petitioner should the merits warrant institution); *Jesco Lighting Grp., LLC v. AGS Lighting Mgmt. LLC*, IPR2025-01328, Paper 9 at 2 (Nov. 20, 2025) (referring for merits review where Petitioner submitted its stipulation with its opposition); *Tesla, Inc. v. Intellectual Ventures II LLC*, IPR2025-00217, Paper 9 at 2 (June 13, 2025) (citing Petitioner's "broad stipulation" filed with its opposition weighed against discretionary denial).

B. The Delaware Case Is in Its Early Stages

There is no trial date, no scheduling order, no claim construction order, and no substantive district court investment in the prior art issues raised in the Petition. Indeed, discovery has not yet opened and the parties have yet to exchange initial disclosures. Patent Owner admits that the district court has not set a trial date.

Patent Owner's only argument on timing is that the absence of a trial date is not dispositive. But Patent Owner cannot reasonably dispute that the absence of a trial date, coupled with the lack of any district court investment in the current case, weighs strongly against discretionary denial. *See, e.g., Bio-Rad Lab's, Inc. v. Cal. Inst. of Tech.*, IPR2024-01451, Paper 11 at 10 (Mar. 27, 2025) (finding limited resources spent in district court case weighed against discretionary denial).

Patent Owner also emphasizes that no stay has been entered, but that proves little at this stage. Delaware courts typically evaluate stay requests after institution, and an institution decision has yet to be issued. *See, e.g., Microsurgical Tech., Inc. v. New World Med., Inc.*, No. 1:20-cv-00754, Dkt. No. 76 at 14 (D. Del. Aug. 16, 2021) (Noreika, J.) (granting motion to stay after *inter partes* review instituted for five of six patents-in-suit). There is ample time for the district court to consider and enter a stay once the requested IPR is instituted. For now, Patent Owner's stay argument is speculative. The actual record shows a nascent district court case, with no scheduling order, trial date, or discovery having taken place, and an IPR that can efficiently resolve focused prior-art challenges before the litigation meaningfully advances.

C. Denial Is Not Favored Simply Because of Common Parties If the Final Written Decision Is Likely to Issue Before the District Court Trial

Patent Owner notes that the same parties are involved in both the IPR and

district court proceedings. But party overlap does not in itself support discretionary denial. Where, as here, the Board’s final written decision is likely to issue long before any district court trial, any party overlap *favours* institution of IPR to improve efficiency by simplifying or eliminating issues in the parallel district court case. *See, e.g., BMW of N. Am., LLC v. Mich. Motor Techs. LLC*, IPR2023-01234, Paper 11 at 14-15 (Jan. 26, 2024) (“[B]ecause a Final Written Decision is likely to issue before the district court trial, we weigh this factor against exercising discretion to deny *inter partes* review.”).

D. The Merits Favor Institution

Patent Owner’s discretionary denial brief does not meaningfully engage with the Petition’s merits. The Petition presents multiple focused grounds based on prior art references that were not considered during prosecution and that are supported by expert testimony from Dr. Andrew Casey. Patent Owner’s inability to present any substantial response to the actual unpatentability showing reveals that its discretionary denial request is simply an effort to avoid a merits review that the challenged claims are unlikely to survive.

In fact, Patent Owner’s own characterization of the purported invention of the ’320 Patent underscores the challenged claims’ lack of inventiveness. Patent Owner identifies only two features that purportedly distinguish the invention of the ’320 Patent from prior art dilution refrigerators: (1) a conventional door to provide

access to inside the refrigerator; and (2) a conventional rectangular, rather than cylindrical, shaped housing. *See* DD Req. at 6-7. But Patent Owner's patent offers no reason why it would require anything more than routine engineering to design a dilution refrigerator using a conventional rectangular refrigerator shape and an access door. There were no significant technical hurdles to adopting this common refrigerator design for a dilution refrigerator if that particular geometry with greater access to the experimental chamber was desired. And as the Petition establishes in detail, the prior art in the field of low temperature cryogenics, including dilution refrigerators and other similar low temperature cryostat devices, had already used all of the claimed features.

III. PATENT OWNER HAS NOT IDENTIFIED ANY INCONSISTENT CLAIM CONSTRUCTION POSITION

A. Patent Owner's Authorities are Inapposite Because They All Turn on an Essential Fact Missing Here—An Inconsistent District Court Position

Patent Owner's claim construction argument is based on the faulty premise that the Petition relies upon a claim construction here that is inconsistent with its district court claim construction position. Patent Owner cites no *Markman* brief, no claim construction statement, no invalidity-contention construction, no noninfringement contention, and no other district court position that conflicts with the Petition.

That omission is dispositive. The recent Director decisions addressing

inconsistent claim construction positions all involved an actual inconsistency between positions taken before the Board and positions taken in district court. For example, in *Revvo*, the petitioner accepted Patent Owner’s district court constructions in the IPR while proposing different constructions in district court, without adequately explaining why different positions were warranted. *Revvo Techs., Inc. v. Cerebrum Sensor Techs., Inc.*, IPR2025-00632, Paper 20 at 2-5 (Dir. Nov. 3, 2025).

This case has none of that. Patent Owner refers to the term “dilution refrigerator” found in the preamble of the challenged claims, but does not identify any inconsistent district court construction, any district court indefiniteness position, or any conditional effort by Petitioners to preserve one claim scope theory for this term in district court while advancing another before the Board. Patent Owner instead tries to create a *Revvo* issue where none exists by attacking an ordinary alternative argument presented in the Petition itself about the limiting nature of the preamble.

B. The Petition’s Alternative Preamble Analysis Is Standard and Proper

The Petition argues that the preamble phrase “a dilution refrigerator comprising” is not limiting. Pet. 14-15. The Petition then shows that, if the Board disagrees, the asserted prior art discloses the preamble. *Id.* 15-17, 46-47. That is not an inconsistent claim construction position. It is standard petition practice.

Patent Owner's position would force petitioners either to waive the argument that a preamble is non-limiting or to forgo an alternative analysis showing how this preamble is met by the prior art. Nothing in the Board's rules or the Director's recent decisions requires that result. Rule 42.104(b)(3) requires a petition to identify how the challenged claims are to be construed. It does not prohibit a petitioner from explaining that a preamble is not limiting while also showing that the prior art satisfies the preamble if the Board finds otherwise.

Revvo, TikTok, Terumo, and Ford confirm the point. Those decisions do not condemn alternative analyses within a petition that applies a consistent claim scope. They address a different problem: petitioners taking one claim scope position in district court while advancing another conflicting position before the Board. Patent Owner has not identified any such conduct here.

C. Patent Owner's "Third Construction" Theory Mischaracterizes the Petition

Patent Owner's so-called "third construction" argument is also based on a faulty premise. Patent Owner says Petitioners effectively construed "dilution refrigerator" to cover any cryogenic device because the Petition relies on Dain in certain obviousness grounds. That is not what the Petition says.

Dain is not the primary reference in the obviousness grounds and it is not relied on for the dilution refrigerator limitation. Ground 1 relies on Batey in view of Dain. Pet. 10, 15-17. Ground 3 relies on Chow in view of Dain. Pet. 10, 46-47.

Batey and Chow supply the dilution refrigerator disclosures. Dain supplies structural teachings regarding housing geometry, planar surfaces, access openings, doors, and seals.

Patent Owner attributes to Petitioners a construction they neither advanced nor adopted. Petitioners do not ask the Board to construe “dilution refrigerator” to mean any cryogenic device. Patent Owner’s inherent construction argument depends on treating a secondary structural reference as though it were the primary reference that meets the preamble. That is a mischaracterization of the obviousness grounds.

D. Patent Owner’s Criticism of Dain Is a Merits Dispute, Not a Basis for Discretionary Denial

Patent Owner’s argument that Dain is not itself a dilution refrigerator may be an argument about analogous art, motivation to combine, or reasonable expectation of success. It is not, however, evidence that Petitioners advanced inconsistent constructions in different forums. The Petition relies on Batey and Chow for the dilution refrigerator context and on Dain for certain structural features recited in the claims.

The specification does not support Patent Owner’s attempt to turn that merits dispute into a claim construction issue. The patent describes dilution refrigerators broadly as “cryogenic devices” that can provide cooling “down to temperatures between approximately 2 mK and 1 K” and explains that they rely on “the heat of

mixing of ^3He and ^4He isotopes.” Ex. 1001, 3:51-56. It then identifies different types of dilution refrigerators, including “classic” or “wet” dilution refrigerators and “modern” or “dry” dilution refrigerators. *Id.* 3:56-63. That description is broader than Patent Owner’s framing.

In any event, Petitioners do not rely on Dain to supply dilution refrigerator functionality. They rely on Batey and Chow for the dilution refrigerator context and on Dain for structural teachings. Patent Owner is trying to convert an ordinary obviousness dispute into a claim construction problem in a convoluted attempt to manufacture a discretionary denial argument. The Director’s decisions do not support that maneuver. They address actual inconsistent claim construction positions across forums. Patent Owner cannot identify one here.

IV. FILING A TIMELY IPR IS NOT GAMESMANSHIP

A. Congress Expressly Permits IPR After the PGR Window

Patent Owner’s delay theory contends that Petitioners should be punished for filing an IPR petition just as Congress authorized. The AIA expressly allows an IPR to be filed after the PGR window closes. Petitioners simply exercised their right to file for an IPR on the schedule provided by Congress.

Moreover, Patent Owner’s complaints of delay are unfounded. Quantum Design acquired Oxford Instruments’ nanoscience business on January 2, 2026 and substituted in as defendants in the district court litigation on January 27, 2026. *See*

Pet. at 5; Ex.1019 (Stipulation and Order to Substitute Parties); Ex.1021, ¶¶ 8, 11. The instant Petition was filed only six weeks later. Thus, the facts reveal that Petitioners, in fact, acted with haste in filing their Petition. Patent Owner cites no authority holding that filing a timely IPR becomes misconduct because the petitioner could have filed a PGR earlier.

Multi-Color does not impose such a rule. It recognizes that PGRs can be favored because they are filed close in time to examination and before expectations become settled. But it does not require a party to file a PGR and it does not transform a timely IPR into gamesmanship. Patent Owner's position would improperly rewrite the statutory scheme by penalizing Petitioners for using the IPR mechanism that Congress provided.

B. The August 2025 Letter Does Not Show Tactical Delay

Patent Owner relies heavily on an August 2025 letter sent by Petitioners' predecessors to Patent Owner. That letter may show that Petitioners' predecessors in interest had identified prior art undermining the validity of the asserted patent. It does not show that Petitioners had a completed PGR petition ready to file, with final grounds, expert analysis, claim mapping, real party in interest analysis, and all procedural requirements satisfied.

Patent Owner's own exhibit confirms the point. The August letter identified numerous potential prior art patents, products, and publications. Ex. 2003. It was

not an IPR petition. It did not contain the expert-supported obviousness grounds ultimately presented here. Patent Owner is trying to turn ordinary pre-filing investigation and settlement correspondence into evidence of bad faith delay. It also ignores the fact that the authors of the letter were in the process of selling the relevant business to the Petitioners. And that Petitioners acted diligently to follow through on the IPR challenge just weeks after the acquisition was consummated.

V. PATENT OWNER CANNOT SHOW SETTLED EXPECTATIONS IN A NEWLY ISSUED PATENT

The '320 patent issued on May 27, 2025. The Petition was filed on March 16, 2026, less than ten months later. Patent Owner asserted the patent in district court almost immediately after issuance. Those facts do not support settled expectations. *See, e.g., Tesla, Inc.*, IPR2026-00204, Paper 14 at 4 (finding “Patent Owner ha[d] not developed strong settled expectations” where “[t]he challenged patents ha[d] not been in force for a significant period of time (all challenged patents issued between 2024 and 2025).”) (designated informative); *Ascentcare Dental Prods., Inc. v. Solmetex, LLC*, IPR2025-01104, Paper 11 at 2 (Oct. 17, 2025) (noting challenges to recently issued patents in “2024 and 2025” favored referral to the Board as “[e]arly challenges to patents favor robust, predictable patent rights and weigh against discretionary denial.”); *Intel Corp. v. Advanced Cluster Sys., Inc.*, IPR2025-00913, Paper 13 at 2 (Sept. 19, 2025) (same for patents “issued in 2022, 2023, and 2025.”); *Tanklogix, LLC v. Sitepro, Inc.*, IPR2025-

00650, Paper 10 at 2 (July 31, 2025) (same for patents “issued in 2019, 2021, 2022, and 2023”); *MIM Software Inc. v. Progenics Pharms., Inc.*, IPR2025-00630, Paper 13 at 2 (July 24, 2025) (same for patents “issued in 2020, 2022, and 2024”).

The Office’s workload management memorandum identifies settled expectations by reference to the length of time the claims have been in force. See Interim Processes for PTAB Workload Management Memorandum at 2 (Mar. 26, 2025) (“Settled expectations of the parties, such as the length of time the *claims* have been in force”). Patent Owner tries to move the clock back to publication of the application in January 2023. But a published application is not an issued patent and does not create settled expectations in later-issued claims. Claims can change during prosecution, and only issued claims confer enforceable patent rights.

Patent Owner’s authorities are inapposite. *Alliance Laundry* involved evidence that the challenged patent had been licensed. *Murata* involved a patent that had been in force for more than sixteen years and technology-space discussions dating back years. *Dabico* involved a patent that had been in force for almost eight years. Here, by contrast, Patent Owner offers attorney argument, a recent issue date, and speculation that Petitioners likely knew about the published application. That is not enough. See *Amgen Inc. v. Bristol-Myers Squibb Co.*, IPR2025-00603, Paper 8 at 2 (July 24, 2025) (“Although there may be good reasons why a patent owner has strong settled expectations in a patent that has only

been in force for three years, for example an explanation of how an extraordinary amount of investment, time, and resources dedicated to research, development, trials, and regulatory approval correlates to settled expectations, Patent Owner has not sufficiently articulated such reasons in these proceedings.”).

VI. PATENT OWNER’S U.S. MANUFACTURING AND PURPORTED NATIONAL SECURITY ISSUES DO NOT CREATE IMMUNITY FROM IPR

While QD Oxford is a UK company that manufactures in the UK, Patent Owner omits the rest of the relevant context. The Oxford NanoScience division of Oxford Instruments was acquired by Quantum Design International, Inc. (“QD”), a U.S. company founded in 1982 and based in San Diego with substantial U.S. operations and interests. Pet. at 5; Ex.1021, ¶¶ 3-7, 10-11. QD employs approximately 260 employees in the United States and has invested significant resources in design, development, testing, and enhancement of advanced scientific instrumentation and related technologies. Ex.1021, ¶ 4. QD’s research and development activities are conducted by a multidisciplinary team of highly skilled engineers and scientists from its corporate headquarters in San Diego, which encompasses approximately 120,000 square feet and includes research and development laboratories, warehouse facilities, manufacturing, sales, and service capabilities. *Id.* In the past decade, QD has invested approximately \$67 million in research and development in the United States, reflecting its sustained commitment

to innovation and supporting its leadership position in advanced scientific instrumentation. *Id.*

QD's customers in the United States include the nation's most prestigious academic institutions, such as the Massachusetts Institute of Technology (MIT), Harvard University, the California Institute of Technology (Caltech), the University of California, Berkeley, Columbia University, and Stanford University. Ex.1021, ¶ 5. Stanford University alone operates more than 29 QD systems across its research programs and QD has installed over 1,300 of its systems throughout the United States. *Id.* QD's cryogenic material characterization instrumentation is also widely deployed in national laboratory systems and federal research agencies in the United States, including the National Institute of Standards and Technology (NIST), the National Institutes of Health (NIH), Brookhaven National Laboratory, Oak Ridge National Laboratory, Fermilab, the National High Magnetic Field Laboratory (National MagLab), and Los Alamos National Laboratories. *Id.*, ¶¶ 5-6.

QD also supports advanced research and metrology activities at numerous United States-based companies, including IBM and Microsoft. *Id.*, ¶ 6. To strengthen domestic access to advanced refrigeration technology, QD acquired the Oxford NanoScience division of Oxford Instruments on January 2, 2026. *Id.*, ¶¶ 7-11. Through the combination of QD and Oxford NanoScience, QD has made significant investments to enhance its U.S.-based customer support, training,

distribution, and service capabilities for dilution refrigeration systems. *Id.*, ¶ 11.

QD is pursuing establishment of a domestic supply chain for quantum computing technologies through United States-based manufacturing, assembly, and testing of cryogenic systems and components. QD's initiatives seek to reduce reliance on foreign suppliers, strengthen national capabilities in critical quantum technologies, and help ensure the United States remains at the forefront of quantum science and technology innovation. *Id.*

Contrary to Patent Owner's assertions, the guidance addresses facts relevant to domestic manufacturing, small business status, and whether AIA proceedings are being used in a way that undermines U.S. investment and manufacturing. *See U.S. Manufacturing and Small Business Use of AIA Proceedings* (Dir. Memo. Mar. 11, 2026). It does not establish a categorical rule that a foreign company doing business, and making significant investments, in the United States cannot seek IPR when sued on a U.S. patent. *See TikTok Inc. v. Cellspin Soft, Inc.*, IPR2024-00757, Paper 12 at 4-5 (Oct. 21, 2024) (noting an IPR proceeding "does not concern Petitioner's intellectual property or business activities, but is solely directed to the patentability challenges raised against Patent Owner's patent claims in the Petition."). Nor does it create immunity from PTAB review for any patent owner that manufactures domestically.

Here, Patent Owner chose to assert a U.S. patent against a company doing

business in the United States and now owned by a U.S. company with significant U.S. interests. Patent Owner is not insulated from PTO review simply because it manufactures domestically. Domestic manufacturing may have some relevance in an appropriate case, but it does not confer absolute immunity from AIA review as Patent Owner contends.

VII. CONCLUSION

Patent Owner's discretionary denial request is based on rhetoric, not the record. The record supports consideration on the merits. The IPR was timely filed. The patent is newly issued. The broad *Sotera* stipulation addresses potential issue overlap with the district court. The district court case is still in the pleading stage, and with no case schedule in place and no trial date set by the court.

Given the record, Patent Owner offers contrived reasons to support discretionary denial. Patent Owner mischaracterizes the Petition's reliance on *Dain* to manufacture a claim construction issue regarding "dilution refrigerator" that does not exist. Patent Owner identifies no inconsistent district court claim construction position by Petitioners. And domestic manufacturing does not create immunity from PTO review as Patent Owner contends. The Director should deny Patent Owner's request for discretionary denial and turn to institution consideration on the merits.

Date: June 22, 2026

Respectfully submitted,

/ Andrew J. Gray IV /

Andrew J. Gray IV, Reg. No. 41,796

MORGAN, LEWIS & BOCKIUS LLP

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), lead counsel for Petitioners hereby certifies that on June 22, 2026, a copy of this Petitioners' Opposition to Patent Owner's Discretionary Denial Brief, including any exhibits filed therewith, was served on Patent Owner's counsel of record at the email correspondence addresses of record:

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