

162 N.E.3d 603 (2020)

TELL CITY BOATWORKS, INC., Petitioner,
v.
INDIANA DEPARTMENT OF STATE REVENUE, Respondent.

Cause No. 18T-TA-00004.

Tax Court of Indiana.

Filed December 18, 2020.

On Appeal from A Final Determination of the Indiana Department of State Revenue.

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606 *606 WENTWORTH, J.

Tell City Boatworks, Inc. has appealed the Indiana Department of State Revenue's denial of its claim for a refund of income taxes for the tax year beginning on July 1, 2010, and ending on June 30, 2011 (the "2010 tax year"). Tell City's appeal presents the following issue of first impression: whether Tell City is entitled to Indiana's research expense tax credit ("Indiana Credit") for the 2010 tax year. Upon review, the Court finds that it is not.

FACTS AND PROCEDURAL HISTORY

607 During the 2010 tax year, Tell City operated a shipyard along the banks of the Ohio River in Tell City, Indiana. (See Unified Stipulation of Facts ("Stip.") ¶ 1; Stip. Ex. 541-J at 1.)^[1] Tell City was a custom builder of made-to-order vessels that did not produce an inventory of duplicate vessels *607 for sale. (See Tr. Vol. 2 at 12-13.)^[2] This family-owned business also performed a small array of vessel repairs, including "repowering, hull replacement, cooler replacement, and shaft work." (See Stip. ¶ 4; Stip. Ex. 541-J at 1.) (See also Stip. ¶ 14; Stip. Ex. 3-J at 988; Tr. Vol. 3 at 139 (providing that Don Foertsch and his three sons, David, Marcus, and Brian owned the company).)

Incorporated in December 2007, Tell City's roots may be traced back to another of the family's businesses: Corn Island Shipyard, Inc., which was incorporated in 1988 to build custom barges and specialized marine structures and launched its first vessel in 1991. (See Stip. ¶¶ 2, 15-17, 19, 21; Stip. Ex. 542-J; Tr. Vol. 1 at 40-41, 306.) Located roughly 11 river miles from Corn Island, Tell City was "added kind of as an overflow yard for Corn Island" to alleviate its capacity issues. (See Tr. Vol. 1 at 40-41, 310-12.) Nonetheless, each of the shipyards has distinct capabilities suitable to its size and launch systems. (See Tr. Vol. 1 at 41-42, 51 (explaining that Tell City is smaller than Corn Island and has a cradle launch system for launching "odd[-]shaped vessels that don't have flat bottoms"); Tr. Vol. 3 at 144-46.) (See also Stip. Ex. 566-J (depicting Tell City's cradle launch system).)

The two businesses used each others' resources in manufacturing custom-made vessels; for example, Tell City used Corn Island's draftsmen and AutoCAD software, its fabrication shop and related equipment, and its office space. (See Tr. Vol. 1 at 45, 47-49, 190-92, 334-35; Tr. Vol. 2 at 18, 26-27; Tr. Vol. 3 at 143-44, 147-49.) Although the two shipyards worked on projects together, they were separate legal entities with their own accounting systems, bank accounts, and employees. (See, e.g., Tr. Vol. 1 at 41, 329-30; Tr. Vol. 2 at 13; Tr. Vol. 3 at 182; Stip. ¶¶ 25-26.) They did not provide warranties for each other's vessels and have never executed a partnership agreement, joint venture agreement, joint contract with a customer, or any type of written contract with each other. (See Tr. Vol. 1 at 315, 329-30; Tr. Vol. 3 at 8, 149.)

Tell City's Design Process

Tell City leveraged Corn Island's decades of shipbuilding experience and launched its first barge in October 2009 just two years after its inception. (See Stip. ¶¶ 11, 21; Stip. Ex. 541-J.) In doing so, it used a design process consisting of five phases: 1) pre-bidding and award, 2) estimating and initial design, 3) detailed design, 4) fabrication and assembly, and 5) testing and launch. (See, e.g., Tr. Vol. 1 at 137-43; Tr. Vol. 3 at 159-60; Stip. Ex. 727-J.)

Phase one is the pre-bidding and award phase. During this phase, Tell City ascertains from its client the operational and transport requirements of the vessel to be built and performs certain preliminary engineering work (e.g., creates sketches). (See Stip. ¶ 40; Resp't Trial Ex. 2, Exs. 3-R at 23, 4-R at 40-41.)

Phase two is the estimating and initial design phase. During this phase, Tell City develops and submits to the client a quote for building the vessel. (See Resp't Trial Ex. 2, Ex. 4-R at 42-43.) To ensure the quote is accurate, Tell City analyzes information it acquires from several sources, such as the client, certain regulatory bodies, vendors, Corn
608 Island's personnel, and Scantling Data.^[3] (See, e.g., Stip. ¶ 41; *608 Resp't Trial Ex. 2, Ex. 4-R at 42-47.) In addition, Tell City creates design drawings, typically starting with the general arrangement, which depicts the "barge[] the way you would see it if you walked up to it." (See Tr. Vol. 2 at 29; Resp't Trial Ex. 2, Exs. 3-R at 144, 4-R at 42.) (See also, e.g., Stip. Ex. 25-J (general arrangement illustration); Tr. Vol. 1 at 83-84 (stating that the general arrangement is the "foundation of the whole vessel and then all other supporting drawings fall underneath that").)

Phase three, the detailed design phase, begins after the client accepts the quote and formally engages Tell City. (See Resp't Trial Ex. 2, Ex. 4-R at 47-48.) During this phase, Tell City orders the steel and performs engineering calculations to ensure the vessel, as designed, satisfies all longitudinal strength, stability, and buoyancy requirements. (See, e.g., Tr. Vol. 1 at 43-44, 87-88, 99-100; Tr. Vol. 4 at 28, 144-45; Stip. Exs. 52-J, 70-J to 72-J, 106-J, 108-J, 172-J, 176-J.) In addition, Tell City designs the vessel's "fine details," such as the layout of the subcomponents and physical welds, by creating inventor files, which are 3-D prototypes of the vessel's subcomponents. (See, e.g., Resp't Trial Ex. 2, Ex. 4-R at 48; Tr. Vol. 1 at 109; Tr. Vol. 2 at 167-68; Tr. Vol. 3 at 48-50; Stip. Exs. 543-J to 559-J.) In this phase, Tell City also creates burn files, the 2-D "drawing[s] of a shape of a piece of steel[.]" which are then electronically transferred to Corn Island's plasma machine that cuts the steel according to the burn file pattern. (See, e.g., Tr. Vol. 1 at 166-67; Tr. Vol. 2 at 166-68; Stip. Exs. 45-J, 131-J, 323-J.)

Phase four, fabrication and assembly, primarily involves construction activities, yet often overlaps with phase three. (See e.g., Tr. Vol. 1 at 88, 283.) The overlap happens because Tell City does not "engineer a vessel fully and then build it" but rather strives "to get that vessel going as quickly as possible ... [by] design[ing it] as [it] go[es] through construction[.]" (See Tr. Vol. 1 at 119.) After the subcomponents produced in Corn Island's fabrication shop are transported to Tell City by barge or truck for assembly, Tell City addresses issues arising from either an ill-fitting part (i.e., a "fit-up" issue) or a customer's change order. (See Resp't Trial Ex. 2, Ex. 2-R at 24;^[4] Tr. Vol. 3 at 159-63.) (See also Tr. Vol. 1 at 195 (explaining that design changes do not always lead to revisions, "but you do [have to] verify that all the components are still good"); Stip. ¶ 455 (describing the work that "fitters" perform).)

In the fifth and final phase, testing and launch, Tell City conducts various tests, completes the final stability calculations, and launches the vessel. (See, e.g., Tr. Vol. 1 at 77-79; Tr. Vol. 2 at 78-79.) For example, the pre-launch tests include air tests to ensure the vessel has no leaks, x-ray tests to verify the physical welds are good, and American Bureau of Shipping (the "ABS") verification surveys to confirm the vessel conforms to all applicable ABS-standards.^[5] (See Tr. Vol.
609 1 at 77-79.) After the *609 vessel is launched, Tell City performs post-launch tests such as a damage survey to determine whether the vessel was damaged during launch and a dead weight survey to confirm that the center of buoyancy calculations are correct. (See Tr. Vol. 1 at 222; Tr. Vol. 2 at 78-79; Tr. Vol. 3 at 158-59; Tr. Vol. 4 at 152-53, 157-58.)

General Background of the Projects at Issue

Tell City claimed an Indiana income tax refund resulting from applying Indiana's Credit related to its design and construction of six first in class vessels^[6] using its five-phase design process. (See, e.g., Stip. ¶¶ 39, 50.) Four of those vessels are at issue: 1) Project 112, a 230' × 62' × 14' cutter dredge, 2) Project 107, a 150' × 69' × 10' crane barge, 3) Project 109, a 200' × 69' × 10' crane barge, and 4) Project 111, a 100' × 50' × 7.5' deck barge.^[7] (See, e.g., Stip. ¶¶ 82, 169, 233, 635-36; Stip. Exs. 105-J at 311, 164-J at 372, 201-J at 483.)

Project 112

Project 112 was the design and manufacture of a cutter dredge for Weeks Marine, Inc. for its use in dredging operations in protected and exposed ocean environments. (See Stip. Ex. 201-J at 481-83.) This non-self-propelled industrial barge was to be completely self-supporting given its onboard supply of fuel, lube oil, water, and its superstructure that included living quarters for a crew of sixty. (See, e.g., Stip. Ex. 201-J at 483; Trial Exs. 736-P, 737-P.)

Weeks Marine expressed its preference that Corn Island, not Tell City, build its vessel. (See Tr. Vol. 1 at 64-65, 351-53; Tr. Vol. 2 at 18-19; Tr. Vol. 3 at 177-78.) Ultimately, Corn Island acquiesced and executed a Construction Agreement with Weeks Marine on September 17, 2010. (Stip. ¶ 270; Stip. Ex. 198-J.) Corn Island's written construction plan provided that "[a]ll engineering, drawings and project management will be [done] by [Corn Island]." (See Stip. Ex. 645-J.) The construction plan also provided, however, that Tell City, as a subcontractor, "would assemble [the] structure (hull and superstructure), install any required below deck piping or equipment, install any [Weeks Marine] supplied large machinery in [the] superstructure, air test [the] compartments, [and] coat ... and launch" the vessel. (See Stip. Exs. 645-J.) Corn Island complied with most of the construction plan. (See Trial Tr. Vol. 3 at 9-17 (indicating that the only deviation from the construction plan was where the outfitting was performed).) Moreover, when the vessel sustained damage to its bottom during the launch, Corn Island assumed liability for the damages, arranged for the repairs, and delivered the vessel to Weeks Marine on March 6, 2012. (See Stip. Exs. 215-J, 649-J, 732-J.)

Project 107

Project 107 was for the design and manufacture of a 150' × 69' × 10' crane barge for J.F. Brennan, Inc. ("Brennan Marine"). (See Stip. ¶ 450; Stip. Ex. 568-J; Tr. Vol. 1 at 58-59 (describing a crane barge as a floating platform upon which a crane may be mounted).) Brennan Marine wanted Tell City to install a Liebherr HS 895 HD, a hydraulic crawler crane, on its vessel, and thus, the barge needed to support all aspects of the crane's operations. (See Stip. ¶¶ 79, 123; 610 Stip. Exs. 20-J, 63-J.) *610 Moreover, it directed Tell City to set the width of the barge at one foot less than the maximum width of 70 feet to allow steel bumpers to be placed on the outside of the vessel. (See Tr. Vol. 1 at 91.) Brennan Marine also instructed Tell City to obtain an ABS load line certificate and install a winch system on the vessel. (See, e.g., Stip. ¶¶ 79, 108; Stip. Exs. 20-J, 48-J; Tr. Vol. 1 at 212.) (See also Tr. Vol. 1 at 37, 120-21; Resp't Trial Ex. 2, Ex. 3-R at 146-47 (explaining that a load line indicates how deep a vessel may be sunk and still remain stable).)

On May 3, 2010, Tell City and Brennan Marine executed the Construction Agreement for Project 107. (Stip. ¶ 450; Stip. Ex. 568-J.) At that time, Tell City had already submitted the load line application to the ABS, performed several engineering calculations, and created design drawings for nearly every aspect of the vessel. (See, e.g., Stip. ¶¶ 108, 132; Stip. Exs. 48-J, 72-J.) (See also Stip. ¶¶ 85-104, 498-502; Stip. Exs. 25-J to 45-J, 595-J to 599-J (indicating that the lug detail, winch foundation and piping, and hull seams drawings were created after May 3, 2010).) With its production activities underway, Tell City began assembling the barge by laying the keel, the barge's backbone, on May 10, 2010. (See, e.g., Tr. Vol. 1 at 118-20; Stip. ¶ 108; Stip. Exs. 48-J at 1431, 724-J.) Then, Tell City began revising the design drawings. (See Stip. ¶¶ 85-86, 89-95, 98-102; Stip. Exs. 25-J, 26-J, 29-J to 35-J, 38-J to 42-J.) Some of the revisions addressed comments from the ABS while others addressed Brennan Marine's change orders. (See, e.g., Stip. ¶¶ 142, 146; Stip. Exs. 25-J, 26-J, 33-J to 35-J, Ex. 38-J, 39-J, 82-J, 86-J.)

Between July and September of 2010, as required by the ABS Rules, Tell City conducted tests to verify that the physical welds were free of irregularities. (See Stip. ¶ 595; Stip. Exs. 697-J at 114878, Ex. 724-J; Tr. Vol. 1 at 77-78.) Also, Tell City revised the stability calculations to address additional ABS comments. (See Stip. ¶ 112; Stip. Ex. 52-J at 1345.) At some point, the vessel was launched, and on September 8, 2010, the crane barge was delivered to Brennan Marine. (See Stip. Ex. 724-J.)

Project 109

Project 109 was the design and manufacture of another crane barge for Brennan Marine. (See Stip. ¶ 167; Stip. Ex. 105-J.) This 200' × 69' × 10' crane barge was to support a fully functioning Manitowoc M-1200 Ringer Crane that could rotate a full 360 degrees. (See Stip. ¶¶ 218, 220; Stip. Exs. 151-J, 153-J; Tr. Vol. 1 at 165-68.) The barge's steel bumpers were placed on the outside of the vessel, its machinery was the crane and a winch system, and it was an ABS-classed Great Lakes load line vessel. (See Tr. Vol. 1 at 91, 212, 263; Stip. ¶ 202, 207; Stip. Exs. 135-J, 140-J.)

On September 29, 2010, Tell City and Brennan Marine executed the Construction Agreement for the vessel. (Stip. ¶ 509; Stip. Ex. 606-J.) By then, various engineering calculations had been performed, the load line application had been submitted to the ABS, and all the design drawings for the vessel (except for the hull seams) had been created. (See, e.g., Stip. Exs. 110-J to 130-J, 135-J, 150-J, 154-J, 155-J, 602-J to 604-J, 636-J.) About a month later on October 27,

2010, Tell City laid the keel. (Stip. Ex. 725-J.) In January of 2011, the welds were tested for irregularities, a sensitivity test was performed,^[8] and the stability calculations were revised *611 to address certain ABS comments. (See Stip. ¶¶ 511, 516-17; Stip. Exs. 156-J, 157-J, 608-J, 613-J, 614-J, 725-J.) The vessel was subsequently launched and was thereafter delivered to Brennan Marine on April 18, 2011. (See Stip. ¶¶ 520-21; Stip. Exs. 617-J, 618-J, 725-J.)

Project 111

Project 111 was the design and manufacture of a 100' × 50' × 7.5' deck barge^[9] for Mulzer Crushed Stone, Inc. ("Mulzer"). (See, e.g., Stip. ¶ 235; Stip. Ex. 164-J; Tr. Vol. 2 at 37; Tr. Vol. 3 at 85-86.) This deck barge was to support a crane manufactured by E-crane that required the installation of a ring pedestal on the barge. (See Tr. Vol. 2 at 35-37; Tr. Vol. 3 at 62, 95-96; Stip. Ex. 171-J; Trial Exs. 734-P, 735-P.)

On March 14, 2011, Mulzer sent the purchase order for the vessel to Tell City. (See Stip. ¶¶ 235, 246; Stip. Exs. 164-J, 175-J; Tr. Vol. 3 at 87-88.) After that, Tell City created design drawings for the forward rake details, the spud well lift cylinder well, and the letters and paint, as the other design drawings had already been produced. (See Stip. Exs. 185-J to 194-J.) In April of 2011, Tell City laid the keel and began revising the design drawings, several drawn after the 2010 tax year.^[10] (See Tr. Vol. 2 at 43, 62-63, 156-57; Stip. Exs. 185-J to 187-J, 190-J to 194-J; Oral Arg. Tr. at 135.) After launching the deck barge, Tell City fully installed the E-crane and at some point after January of 2012, delivered the vessel to Mulzer. (See Tr. Vol. 2 at 35; Stip. ¶¶ 237, 545; Stip. Exs. 166-J, 642-J.)

The Administrative Proceedings

In January of 2015, Tell City filed an Indiana Amended Corporate Income Tax Return for the 2010 tax year, reporting that it was entitled to a refund of income tax for its increased research activities. (See Stip. ¶ 6; Stip. Ex. 2-J.) Tell City claimed qualified research expenses variously for wages, supplies, and contract research regarding all six projects. (Stip. ¶ 51.) The Department, however, denied Tell City's refund claim on March 30, 2016, concluding that Tell City "failed to provide creditable evidence to verify that [its claimed] research expenses [] meet the criteria as qualified research expenses." (See Stip. ¶ 7; Stip. Ex. 3-J at 984-94.) Tell City protested the disallowance of its Indiana Credit and its claim for refund. (See Stip. Ex. 4-J at 899.) On July 19, 2017, after conducting an administrative hearing, the Department again denied Tell City's refund claim, concluding that the evidence still did not support Tell City's refund claim.^[11] (See Stip. ¶ 8; Stip. Ex. 4-J.)

Tax Court Proceedings

On January 16, 2018, Tell City timely filed its original tax appeal. (See Stip. Ex. 696-J.) The Court subsequently resolved several substantive motions^[12] and held a *612 five-day trial beginning November 19, 2019, and ending on November 26, 2019. During the trial, Tell City offered the testimony of Don and David Foertsch, Brian Meunier, and Brian Varner as fact witnesses. During the year at issue, Don Foertsch was the president of Tell City, and David Foertsch was the company's vice-president. (See Stip. ¶¶ 12-13; Tr. Vol. 3 at 139-40.) Messrs. Meunier and Varner were design draftsmen employed by Corn Island who occasionally served as project managers for Tell City's projects, producing quotes, design drawings, production prints, and inventor files. (See, e.g., Tr. Vol. 1 at 37-40, 184-86; Tr. Vol. 2 at 10-11, 16, 21-22, 81, 114-15; Tr. Vol. 3 at 39-40.) None of these four witnesses held degrees in marine engineering or were naval architects. (See, e.g., Tr. Vol. 1 at 185, 333, 336; Tr. Vol. 3 at 40-43, 182.) Fontaine M. ("Bud") Johnson, Jr., the lead engineer and naval architect for both Tell City and Corn Island during the 2010 tax year, passed away before the trial. (See, e.g., Stip. ¶¶ 465-66; Tr. Vol. 1 at 69-70.) (See also, e.g., Tr. Vol. 1 at 42-43 (explaining that Mr. Johnson managed the engineering team, oversaw production, and served as the salesman for both yards), 324-25 (providing that Mr. Johnson "analyze[d] everybody's barge" and that he "knew what target he had to hit when he was designing [ABS] barges"); Resp't Trial Ex. 2, Ex. 4-R at 57-58 (explaining that Mr. Johnson also knew how to perform stability calculations).)

John Sullivan, a graduate of the Massachusetts Maritime Academy who had worked as a marine engineer for over twenty years, appeared as the Department's expert witness. (See Tr. Vol. 4 at 5-6.) Mr. Sullivan is not a naval architect, but he testified that he had studied naval architecture, was familiar with marine engineering calculations, held the highest-grade chief engineer licenses issued by the United States Coast Guard, and had been certified as a surveyor for the ABS since the late nineties. (See Tr. Vol. 4 at 6-9.) (See also Tr. Vol. 4 at 9 (stating that Mr. Sullivan can "survey almost any vessel in the world to ensure" that it complies with the ABS Rules).)

The Court heard oral argument remotely on June 24, 2020. Additional facts will be supplied as necessary.

STANDARD OF REVIEW

[1] The Court reviews final determinations of the Department de novo. IND. CODE § 6-8.1-9-1(c) (2020). Accordingly, the Court is not bound by either the evidence or the issues presented to the Department at the administrative level. Horseshoe Hammond, LLC v. Indiana Dep't of State Revenue, 865 N.E.2d 725, 727 (Ind. Tax Ct. 2007), review denied.

LAW

During the 2010 tax year, a taxpayer who incurred a qualified research expense in Indiana could take the Indiana Credit against that year's Indiana adjusted gross income tax liability. See IND. CODE § 6-3.1-4-2(a) (2010). For purposes of the Indiana Credit, the term "qualified research expense" has the same meaning as that defined under Section 41(b) of the Internal Revenue Code except that the qualified expense must be incurred for research conducted in Indiana. IND. CODE § 6-3.1-4-1 (2010) (amended 2015); I.R.C. § 41(b) (2010) (amended 2017). See also IND. CODE § 6-3.1-4-4 (2010) (providing that IRC § 41 and the related treasury regulations are applicable to the administration and interpretation of the Indiana Credit).

- 613 *613 The Internal Revenue Code limits the types of expenses eligible to be credited by defining "qualified research expenses" as the sum of the expenses paid or incurred for "in-house research expenses" and "contract research expenses." I.R.C. § 41(b)(1). "Inhouse research expenses" are wages paid or incurred to an employee for "qualified services" performed by the employee and "amount[s] paid or incurred for supplies used in the conduct of qualified research[.]" I.R.C. § 41(b)(2)(A)(i)-(ii). "Qualified services" are services consisting of engaging in qualified research or engaging in the direct supervision or direct support of research activities that constitute qualified research. I.R.C. § 41(b)(2)(B). "Contract research expenses" are 65% of any amount paid or incurred by a taxpayer to any non-employee for qualified research. I.R.C. § 41(b)(3)(A). Thus, to be eligible for the Indiana Credit, Tell City must demonstrate that it performed qualified research or paid someone else to perform qualified research during the 2010 tax year.

For purposes of the Indiana Credit, the Internal Revenue Code also defines "qualified research" as research that satisfies four distinct tests. See I.R.C. § 41(d)(1). See also *Union Carbide Corp. & Subsidiaries v. C.I.R.*, 97 T.C.M. (CCH) 1207, 2009 WL 605161, at *77 (T.C. 2009), *aff'd*, 697 F.3d 104 (2d Cir. 2012). The first test, the "Section 174 Test," requires that the research expenses be eligible for treatment as specified research or experimental expenditures under section 174. I.R.C. § 41(d)(1)(A). The second test, the "Technological Information Test," requires that the research be undertaken for the purpose of discovering technological information. I.R.C. § 41(d)(1)(B)(i). The third test, the "Business Component Test," requires that the taxpayer intend the research to discover information that will be useful in the development of a new or improved business component of the taxpayer. I.R.C. § 41(d)(1)(B)(ii). The fourth test, the "Process of Experimentation Test," requires that substantially all of the research activities constitute elements of a process of experimentation for the purpose of discovering a new or improved function, performance, reliability, or quality. I.R.C. § 41(d)(1)(C), -3(A).

Each of these four tests must be applied separately to each business component (i.e., any product, process, computer software, technique, formula, or invention that the taxpayer either holds for sale, lease, or license or uses in its trade or business). I.R.C. § 41(d)(2)(A), (B). If a business component as a whole fails one of the tests, however, the shrinking-back rule provides that the test be applied to the most significant subset of the business component's elements (i.e., a subcomponent) to determine whether that subcomponent satisfies each test. See *Treas. Reg. § 1.41-4(b)(2)* (2010) (amended 2016). The "shrinking-back" continues until either the most significant subcomponent of the business component satisfies all four tests or the most basic subcomponent is reached and fails to satisfy the tests. *Id.*; *Union Carbide*, 2009 WL 605161, *78.

ANALYSIS

On appeal, Tell City challenges the Department's denial of its refund claim, contending that the trial evidence demonstrates that its research expenses qualified for Indiana's Credit during the 2010 tax year. (See, e.g., *Pet'r Post-Trial Reply Br.* ("Pet'r Reply Br.") at 3-4.) The Department, however, asserts that the evidence shows that 1) Tell City's research expenses for Project 112 do not qualify for the Indiana Credit; 2) the shrinking-back rule cannot be applied in this case; and 3) Tell City's research expenses for Projects 107, 109, and 111 do not satisfy all of the qualified *614 research tests. (See *Resp't Post-Trial Br.* ("Resp't Br.") at 14-50.)

1. Project 112

[2] The dispositive issue in determining Tell City's eligibility for the Indiana Credit regarding Project 112 is whether the Weeks Marine cutter dredge is Tell City's, not Corn Island's, business component. Tell City claims the Project 112 vessel is its business component because it developed the vessel working jointly with Corn Island, both having the same owners and working under the same contract, where Tell City built and delivered the vessel to Corn Island and Corn Island sold the vessel to Weeks Marine. (See Pet'r Br. at 27; Pet'r Reply Br. at 15-16; Oral Arg. Tr. at 35-36, 39-45.) Moreover, Tell City claims there is no federal or Indiana authority that permits just the named party in a written contract or a 100% owner of a jointly developed business component to claim the Indiana Credit. (Pet'r Reply Br. at 15-16.) In the alternative, Tell City claims Corn Island assigned the rights and responsibilities under the contract to it, making the vessel Tell City's business component. (See Pet'r Br. at 27; Pet'r Reply Br. at 16.) The Department contends, however, that Tell City cannot claim Indiana's Credit for the Project 112 vessel because it did not hold the vessel out for sale, and thus, it was not Tell City's business component. (See Resp't Br. at 14-16; Oral Arg. Tr. at 107-08.)

Tell City identified the Project 112 Weeks Marine cutter dredge as its business component. (See Pet'r Br. at 26; Oral Arg. Tr. at 11.) The plain language of IRC § 41(d)(2)(B) defines a "business component" as, among other things, a product "which is to be ... held for sale, lease, or license, or [] used by the taxpayer in a trade or business of the taxpayer." I.R.C. § 41(d)(2)(B); accord *Union Carbide*, 2009 WL 605161, at *77. The Court does not agree that the Project 112 vessel is Tell City's business component for two reasons.

[3] First, Tell City did not provide any evidence establishing that it held the Project 112 vessel for sale, lease, or license or that it used the vessel in its trade or business. Instead, Tell City misdirected the Court from the core issue by arguing that the laws do not require ownership or being a party to a contract, adding that it is sufficient that the expenses claimed were all for work on this project. (See, e.g., Pet'r Br. at 27; Pet'r Reply Br. at 15-16; Oral Arg. Tr. at 35-45.) Tell City's arguments, therefore, invite the Court to ignore the statutory language and add new content to the statute. (See Pet'r Br. at 27; Pet'r Reply Br. at 15-16.) It is well-established that the Court may not construe an unambiguous statute for the purpose of extending or limiting its operation. See, e.g., *Blue Chip Casino, LLC v. LaPorte Cnty. Treasurer*, 27 N.E.3d 1198, 1201 (Ind. Tax Ct. 2015), review denied. The Court declines to make law or put words in legislators' mouths. Accordingly, the Court is not persuaded by Tell City's reasoning that it holds the Project 112 vessel for sale, lease, or license or uses in its trade or business.

Second, Tell City contends that it nevertheless meets the Business Component Test because Corn Island assigned to Tell City the Project 112 Weeks Marine cutter dredge construction agreement and work. (See Pet'r Br. at 27; Pet'r Reply Br. at 16.) The only evidence that corroborates this contention is the testimony of Tell City's vice-president and part owner, David Foertsch. He stated that, in his view, Corn Island "assigned" Project 112 to Tell City "[b]ecause that's where it would fit best [with respect to the two shipyards'] production" capacities. (See Tr. Vol. 3 at 178.)

615 Nonetheless, "an assignment is a transfer or setting over of property, or of some *615 right or interest therein, from one person to another[.]" BLACK'S LAW DICTIONARY 147 (11th ed. 2019) (citation omitted). David Foertsch's testimony used the term "assignment" in its ordinary sense, suggesting some informal reciprocity between Corn Island and Tell City, rather than in its legal sense because he did not testify that Corn Island transferred a right or interest in either the contractual agreement or the project to Tell City.

Moreover, all the other evidence refutes David Foertsch's assertion and shows Corn Island possessed all the rights and duties under the agreement. For example, the named parties to the Project 112 construction agreement were Corn Island and Weeks Marine; the vessel had a Corn Island hull number (Hull No. 293),^[13] not a Tell City hull number; the title box on all the Project 112 design drawings contained the Corn Island hull number as well as Corn Island's name, mailing address, and telephone number; and all written communications with Weeks Marine and the ABS regarding Project 112 identified it as a Corn Island project. (See Stip. Exs. 198-J at 395, 244-J to 250-J, 542-J at 12; Resp't Trial Ex. 2, Ex. 4-R at 102; Tr. Vol. 2 at 41.) Corn Island also assumed full financial responsibility for the damage to the Project 112 vessel upon launching, consistent with its contractual obligations. (See, e.g., Stip. Exs. 198-J at 399-400, 215-J.) Finally, Corn Island paid Tell City for its services on Project 112 as a subcontractor. (See, e.g., Stip. Ex. 645-J.) Accordingly, Tell City has not shown that Corn Island assigned it the Project 112 construction contract. Therefore, the Court finds that neither the evidence nor the rationales put forth by Tell City support its claim that the Project 112 Weeks Marine cutter dredge was Tell City's business component for purposes of meeting the requirements of the Business Component Test. Because Tell City did not have the right to sell, lease, license, or use the Project 112 vessel in its trade or business and was not a party to or an assignee of the construction contract, the Court holds that it is ineligible to claim the Indiana Credit for its Project 112 expenses.

2. The Shrinking-back Rule — Treasury Regulation § 1.41-4(b)(2)

To determine whether research is "qualified research" for purposes of the Indiana Credit, the four statutory tests "are to be applied first at the level of the discrete business component[.]" See Treas. Reg. § 1.41-4(b)(2); see also I.R.C. § 41(d)(1). If these requirements are not met at that level, they are applied to decreasing subcomponents of the business component under the shrinking-back rule until either the subcomponent satisfies the requirements or the smallest subcomponent is reached and fails to satisfy a test. Treas. Reg. § 1.41-4(b)(2).

616 Tell City argues that the use of the shrinking-back rule is neither necessary nor appropriate in its case because both case law and Treasury Regulation § 1.174-2 indicate that all expenses related to pilot models,^[14] which Tell City alleges are at issue here, are qualified for the Indiana Credit. (See Pet'r Br. at 30; Pet'r Reply Br. at 20-21; Oral Arg. Tr. at 8-10 (citing generally *Trinity Indus., Inc. v. United States* (*Trinity I*), 691 F.Supp.2d 688 (N.D. *616 Tex. 2010), *aff'd*, 757 F.3d 400 (5th Cir. 2014) (*Trinity II*); *TG Missouri Corp. v. C.I.R.*, 133 T.C. 278 (T.C. 2009); *Union Carbide*, 2009 WL 605161).) Alternatively, Tell City argues that it presented an analysis of its costs capable of being broken down into subcomponents in the event the Court determines that a shrink-back is appropriate. (See Pet'r Br. at 29.) Tell City explains, however, that although it provided sufficient evidence to breakdown its costs, it did not link its costs to specific subcomponents because the Department failed to identify which subcomponents of the vessels might qualify for Indiana's Credit. (See Pet'r Br. at 29-30; Oral Arg. Tr. at 51-53.) On the other hand, the Department contends that Tell City cannot apply the shrinking-back rule to qualify its expenses related to subcomponents because Tell City's evidence identifies only the vessels themselves as its business components and does not identify any subcomponents or link them to related expenses. (See Resp't Br. at 16.)

With respect to its first argument, Tell City's reliance on the *Trinity I*, *TG Missouri*, and *Union Carbide* cases for the proposition that expenses related to pilot models or prototype business components are necessarily qualified research expenses is misplaced. For example, in *Trinity I*, the business components were prototypes (i.e., vessels the taxpayer hoped to duplicate); nonetheless, the Court did not reflexively qualify all their related expenses, but instead, continued to examine whether the shrinking-back rule could be applied. See *Trinity I*, 691 F.Supp.2d at 690, 692-94. Moreover, nothing in the plain language of Treasury Regulation § 1.174-2 conditions the applicability of the shrinking-back rule on whether a product is a pilot model or prototype. See generally Treas. Reg. § 1.174-2 (2010) (amended 2014). Accordingly, even if Tell City's vessels were determined to be pilot models, the shrinking-back rule could still apply.

Tell City argues in the alternative that if the Court determines to apply the shrinking-back rule, it has provided ample evidence to permit a shrink-back of costs related to subcomponents. (See Pet'r Br. at 30.) More specifically, Tell City stated that although "[i]t is absolutely possible [to break down costs] based on the information available ... [it] would first need to know what those discrete parts of the vessel were so the costs could be broken out." (Pet'r Br. at 30, n. 7.) Tell City did not present evidence of cost breakdowns related to vessel subcomponents at trial, claiming that it "could not segregate costs in any meaningful way" because the Department did not provide a "discernible description" of what part of the vessel might qualify. (Pet'r Br. at 30, n.7.)

617 The burden to identify which subcomponents of the vessels might qualify for the Indiana Credit rested with Tell City, not the Department. See, e.g., *Haas Pub. Co. v. Indiana Dep't of State Revenue*, 835 N.E.2d 235, 236 (Ind. Tax Ct. 2005), (providing that when a taxpayer seeks a refund of tax based on its eligibility for a certain credit or exemption, the taxpayer bears the burden of proving that it qualifies for that credit or exemption), review denied. See also, e.g., *Trinity II*, 757 F.3d at 415. While the Court acknowledges that the task of identifying the subcomponents may have been complex, involving "a certain amount of guessing," (see Oral Arg. Tr. at 51), neither the complexity nor the "infinite number of ways[.]" (see Oral Arg. Tr. at 51), that Tell City could have broken out its costs shifted the burden of identifying any subcomponents from Tell City to the Department. Accordingly, the Court will not consider the shrinking-back rule in this case and will turn to whether Tell City has shown that its Projects 107, 109, and 111 *617 vessels, which Tell City identified as its business components, meet the requirements of the four qualified research tests.

3. The Four Qualified Research Tests — IRC § 41(d)(1)

To be eligible for Indiana's Credit, Tell City must present evidence that shows the research activities it carried out in building each of the vessels in Projects 107, 109, and 111 met the requirements of all four qualified research tests. Accordingly, the Court will analyze whether Tell City's individual projects meet the requirements of the Business Component Test, the Section 174 Test, the Technological Information Test, and the Process of Experimentation Test.

The Business Component Test

[4, 5] Under the Business Component Test, the taxpayer must intend that the information to be discovered during its research will be useful in the development of a new or improved business component of the taxpayer. I.R.C. § 41(d)(1)(B)(ii). A "business component" is a product that the taxpayer either holds for sale, lease, or license or uses in its trade or business. I.R.C. § 41(d)(2)(B). For purposes of this test, the taxpayer must identify the business components for which it claims qualified research activities. See, e.g., Bayer Corp. & Subsidiaries v. United States, 850 F.Supp.2d 522, 540 (W.D. Pa. 2012) (explaining that a taxpayer's identification of all business components generating qualified research expenses during the years at issue in that case was critical to proving its refund claim). Additionally, research is "useful" if it provides some level of functional improvement to the taxpayer. See, e.g., Norwest Corp. & Subsidiaries v. C.I.R., 110 T.C. 454, 495 (T.C. 1998), superseded in part by regul., Treas. Reg. § 1.41-4(a)(3)(ii), as recognized in Union Carbide, 2009 WL 605161, at *77 n.42.

[6] Tell City identified its business components as the Project 107, 109, and 111 vessels, claiming that it intended its research activities related to each project to develop or improve each of the custom vessel's new designs. (See Pet'r Br. at 26-27; Oral Arg. Tr. at 11-12.) The Department has not presented any evidence or argument that refutes this claim. (See Resp't Br. at 14-49; Oral Arg. Tr. at 63-123 (disputing only that Project 112 satisfies the Business Component Test).) Indeed, the Department did not dispute that the design of each of the three vessels was done to accommodate the specific functionalities of three different cranes, and no evidence was presented to show that Tell City built these exact vessels before. (See, e.g., Tr. Vol. 1 at 59; Tr. Vol. 4 at 107 (confirming that the type of crane on a barge affects its overall design).) Accordingly, the Court finds that Tell City's research activities related to each of the vessels in Projects 107, 109, and 111 have satisfied the Business Component Test.

The Section 174 Test

[7] Internal Revenue Code § 174 generally governs the deductibility of "research or experimental expenditures,"^[15] which are defined as costs "incurred in connection with the taxpayer's trade or business which represent research and development costs in the experimental or laboratory sense." See I.R.C. § 174(a) (2010); Treas. Reg. § 1.174-2(a)(1). See also Union Carbide, 2009 WL 605161, at *78. During the 2010 tax year, the related treasury regulation further explained:

618 *618 Expenditures represent research and development costs in the experimental or laboratory sense if they are for activities intended to discover information that would eliminate uncertainty concerning the development or improvement of a product. Uncertainty exists if the information available to the taxpayer does not establish the capability or method for developing or improving the product or the appropriate design of the product. Whether expenditures qualify as research or experimental expenditures depends on the nature of the activity to which the expenditures relate, not the nature of the product or improvement being developed or the level of technological advancement the product or improvement represents.

Treas. Reg. § 1.174-2(a)(1) (emphasis added). Moreover, the Section 174 Test requires that the uncertainty concerning the development or improvement of a product exists as of the beginning of the research activity. Union Carbide, 2009 WL 605161, at *79-80. Thus, a taxpayer's research activities that are intended to discover information that would eliminate uncertainty concerning the development or improvement of a business component meet the requirements of this part of the test. *Id.*

[8] The parties do not dispute that the Project 107, 109, and 111 expenses were incurred in connection with Tell City's trade or business. (Compare generally Pet'r Br., with Resp't Br.) The Department claims, however, that Tell City "never faced [any] meaningful design uncertainties or uncertainties regarding its technical capacity to achieve the final designs requested by clients." (Resp't Br. at 18.) The Department further explains that before Tell City agreed to build each of the vessels, it already had created detailed design drawings for 90% of each vessel, leaving uncertainty only about their minor subcomponents (e.g., the winch system), but not about the development or improvement of the entire vessels. (See Resp't Br. at 19-26.) Nonetheless, the Department's claim falls short for three reasons.

First, the Department's position assumes that Tell City's projects began when Tell City and its customers entered into a binding agreement. (See Resp't Br. at 18-26.) The Department did not provide any authority, however, that research projects begin, for purposes of eliminating uncertainty, only when a written contract is executed. (See Resp't Br. at 18-26.)

The evidence demonstrates that Tell City began working on each project well before the contracts were signed. For example, even though Tell City and Brennan Marine had signed a Construction Agreement for Project 107 on May 3, 2010, Tell City began working on that project as early as February 2010. (See, e.g., Stip. Exs. 96-J, 102-J, 568-J.) Similarly, Tell City and Brennan Marine signed their contract for Project 109 on September 29, 2010, but Tell City had begun working on that project several months earlier. (See Stip. Exs. 105-J, 146-J at 2864 (handwritten estimate for steel dated April 2, 2010), 601-J (handwritten estimate for steel dated February 12, 2010).) Accordingly, at the time the projects began, the design of the vessels was not certain.

619 Second, the Department did not provide evidence to show that Tell City had no uncertainty regarding the development or improvement of the vessels given its own expertise supplemented by information available from ABS rules, Coast Guard regulations, customers, and vendors. (See Resp't Br. at 6-8.) (See also Tr. Vol. 1 at 237.) The evidence presented at trial shows that despite its significant reliance on both the expertise of Mr. Johnson, its naval architect, and an abundance of other information, *619 Tell City did not know the ultimate design of any of the vessels at the outset of the projects. (See, e.g., Stip. ¶ 43; Tr. Vol. 1 at 72-73, 288; Tr. Vol. 4 at 21-22, 147-49, 151 (collectively explaining that although the ABS provides general rules with drawings and specifications, it does not perform engineering calculations or create design drawings for vessels, but merely reviews the calculations and design drawings, makes recommendations, and inspects vessels).) (See also, e.g., Stip. ¶ 41; Tr. Vol. 2 at 29 (indicating that although some of Tell City's customers provide design drawings, they are often of no use given Tell City's unique manufacturing and launch processes).) Indeed, Mr. Varner, one of Corn Island's long-time design draftsmen, testified that in his experience most of the design uncertainty occurs at the beginning of each project. (Tr. Vol. 3 at 56.)

[9] The Court finds persuasive the reasoning of the California Office of Tax Appeals that recognized, when faced with the same argument, that "every research project must start, to some extent, with existing knowledge. That is, the uncertainty requirement does not require that [the taxpayer] have started a project from a blank slate without any knowledge of engineering or design principles." In re The Appeals of: Charles Walden & Deborah Anderson, Charles Walden, & Walden Structures, Inc., 2018 WL 10151186, at *15 (Cal. Off. Tax App. Nov. 28, 2018). As a result, the evidence shows that uncertainty was not resolved by Tell City's expertise and other authoritative information available to it at the outset, but required extensive engineering calculations, design drawings, and modeling with software to eliminate uncertainty concerning the development, the improvement, and the manufacture of each vessel.

Third, the Department further argues that Tell City knew the appropriate design of the vessels at the outset of each project because it had the technical capability to design and build the vessels before it executed the construction agreements. (See Resp't Br. at 19-26.) An uncertainty may exist, however, even if a taxpayer knows that it is technically possible to achieve a goal, but is uncertain about the appropriate design to reach that goal. Treas. Reg. § 1.174-2(a)(1); Union Carbide, 2009 WL 605161, at *78. Here, the evidence shows that while Tell City knew it had the technical capability to design and build the vessels before it executed the construction agreements, it did not know the appropriate design for each vessel at the outset of each project. Accordingly, the Court finds that Tell City's research activities related to each of the vessels in Projects 107, 109, and 111 have satisfied the Section 174 Test.

The Technological Information Test

The Technological Information Test requires research be undertaken for the purpose of discovering information that is technological in nature. See I.R.C. § 41(d)(1)(B)(i). With respect to that requirement, Treasury Regulation § 1.41-4(a)(4) provides that

information is technological in nature if the process of experimentation used to discover such information fundamentally relies on principles of the physical or biological sciences, engineering, or computer science. A taxpayer may employ existing technologies and may rely on existing principles of the physical or biological sciences, engineering, or computer science to satisfy this requirement.

Treas. Reg. § 1.41-4(a)(4).

620 [10] Tell City claims and the evidence shows that the information it sought to discover regarding the development of each vessel fundamentally relied on engineering. (See Pet'r Br. at 37-38.) (See also, e.g., Stip. Exs. 71-J to 73-J, 106-J, 108-J, *620 579-J at 114818-19 (demonstrating that various engineering calculations were performed in designing each vessel).) The Department does not dispute that Tell City's activities satisfy this test. (See Resp't Br. at 12 n.2.) Accordingly, the Court finds that Tell City's research activities in building the Projects 107, 109, and 111 vessels satisfy the Technological Information Test in full.

The Process of Experimentation Test

The last of the four tests, the Process of Experimentation Test, requires research activities to have three elements: (1) substantially all of the research activities must constitute (2) elements of a process of experimentation (3) for a qualified purpose. I.R.C. § 41(d)(1)(C). The "substantially all" element requires that 80% or more of the taxpayer's research activities for each business component, measured on a cost or other consistently applied reasonable basis, constitute a process of experimentation for a qualified purpose: a purpose related to a new or improved function, performance, reliability, or quality of a business component. *Union Carbide*, 2009 WL 605161, at *80 (citing *Norwest Corp.*, 110 T.C. at 497). See also Treas. Reg. § 1.41-4(a)(5)(ii), -(6). A taxpayer will not fail the substantially all requirement, however, if the remainder of its research activities related to the business component (i.e., 20% or less) are not elements of a process of experimentation for a qualified purpose as long as they satisfy the uncertainty standard^[16] required by the Section 174 Test and are not otherwise excluded by IRC § 41(d)(4). *Id.*

[11, 12] Treasury Regulation § 1.41-4(a)(5) explains that

[a] process of experimentation must fundamentally rely on the principles of the physical or biological sciences, engineering, or computer science and involves the identification of uncertainty concerning the development or improvement of a business component, the identification of one or more alternatives intended to eliminate that uncertainty, and the identification and the conduct of a process of evaluating the alternatives (through, for example, modeling, simulation, or systematic trial and error methodology). A process of experimentation must be an evaluative process and generally should be capable of evaluating more than one alternative.

Treas. Reg. § 1.41-4(a)(5) (emphasis added). The process of experimentation element is not satisfied by the use of "a method of simple trial and error." *Union Carbide*, 2009 WL 605161, at *81. Both the treasury regulations and the relevant case law indicate, however, that a process of experimentation does not need to involve Bunsen burners, beakers, and test tubes, but instead, it may take place through a design process. See, e.g., Treas. Reg. § 1.41-4(8) at Ex. 3 (providing the example of a manufacturer using a qualified process of experimentation to design a thinner shredding blade that is capable of more finely shredding food products); *Suder v. C.I.R.*, 108 T.C.M. (CCH) 354, 2014 WL 4920724, at *17-19 (T.C. 2014) (finding that a taxpayer's systematic modeling and testing of schematics to address uncertainties established a qualified process of experimentation). Instead, a process of experimentation requires "a methodical plan involving a series of trials to test a hypothesis, analyze the data, refine the hypothesis, *621 and retest the hypothesis so that it constitutes experimentation in the scientific sense." *Union Carbide*, 2009 WL 605161, at *81.

Tell City asserts that the Process of Experimentation Test "should not reasonably be at issue" because the design and development of the vessels would have been impossible without each phase of its iterative design process. (See, e.g., Pet'r Br. at 28-29 (claiming its design process is "a "systematic approach of engineering and design [that] include[ed] developing specifications, initial design[s], applying engineering principles to iterate the design[s], and testing [] the final vessel[s]"); Pet'r Reply Br. at 12-14.) Tell City explains that even the Department's own expert, Mr. Sullivan, recognized that it used an iterative process of experimentation, referring to it as the "FEED" process, and admitted that engineering and designing vessels necessarily involves a process of experimentation. (Pet'r Br. at 3 (citing Tr. Vol. 4 at 144-45).) (See also Tr. Vol. 4 at 33 (defining the "FEED" process as "Front End Engineering and Design").)

The Department urges the Court to reject Tell City's position, however, claiming that the trial evidence does not show that at least 80% of its shipbuilding activities constituted a process of experimentation. (See, e.g., Resp't Br. at 46-48.) The Department reasons that Tell City did not design the vessels from scratch, but "simply made standard modifications to existing designs and/or incorporated well-known capabilities into another vessel." (Resp't Br. at 26.) In addition, the Department disputes Tell City's assertion that Mr. Sullivan testified that Tell City's design process constituted scientific experimentation, explaining that he simply testified that "design changes occur in every shipbuilding project." (See Resp't Br. at 40-41 (citing Tr. Vol. 4 at 144-45).)

In support of their respective positions, the parties have cited case law from several other jurisdictions. (Compare, e.g., Pet'r Br. at 4 (setting forth its table of authorities), with Resp't Br. at iii (providing its table of authorities).) Having examined each of those cases, the Court finds the *Trinity* cases most instructive.

In *Trinity I*, the trial court evaluated the denial of a shipbuilder's refund claim related to qualified research expense tax credits for its design and construction of several first in class ships. See *Trinity I*, 691 F.Supp.2d at 690. As is the case here, the *Trinity I* court noted that "[m]uch of the design work at issue involved integrating extant subassemblies into a ship design." *Id.* at 692. Nonetheless, the court recognized, "[d]etermining which configuration out of the universe

available can in particular cases itself involve a significant research effort." *Id.* The court further observed that various systems of the ships interacted with one another, sometimes in complex and nonintuitive ways, and the mere fact that first in class ships incorporated existing systems or well-known components, like an engine, did not mean there is no process of experimentation. *Id.*

The shipbuilder in *Trinity I* did not offer evidence of the costs associated with subcomponents of the vessels; thus, the shrinking-back rule could not be applied. *Id.* at 693. Accordingly, the court stated that "[the shipbuilder] must stand or fall on an '80% of the whole ship' basis." *Id.* at 694. The court proceeded to examine each ship as a whole considering the novelty of its design features (as an indicator of design-related uncertainties), the shipbuilder's experience designing similar ships, the design challenges necessary to meet each ship's requirements, and the manner in which those challenges, if any, were resolved. See *id.* at 694-97. Ultimately, the court found that even though some aspects *622 of each ship's development clearly involved a process of experimentation, just two of the six ships at issue had sufficient evidence to satisfy the 80% threshold of the "substantially all" requirement. See *id.*

The shipbuilder subsequently appealed the trial court's decision, claiming that two other vessels^[17] met the Process of Experimentation Test by satisfying the "substantially all" requirement. See *Trinity II*, 757 F.3d at 405-06, 413-16. The appellate court found that the shipbuilder had presented evidence to show that modifying the existing hull design to meet the first vessel's specifications involved some systematic trial and error, stating that "[f]inding a working hull design required testing and retesting, including computer modeling and at least four design revisions." See *id.* at 415. Nonetheless, the appellate court noted that the shipbuilder failed to show which other aspects of its research activities involved the sort of systematic trial and error required by the test. *Id.* Moreover, because the shipbuilder had not designed a prominent feature on the vessel, the coupler system, the appellate court found that the trial court correctly focused on the research activities involving just the vessel, not the coupler system. *Id.* With respect to the second vessel, the appellate court stated that even though the shipbuilder had to design a new hull, its ultimate design merely involved modifications to old hulls and had similarities to existing hulls. *Id.* at 415-16. As a result, the appellate court affirmed the *Trinity I* court.

In this case, Tell City claims as its qualified research expenses its supply costs, contract research expenses, and all of the time its production employees (i.e., foremen, leadermen, fitters, tackers, laborers, and welders) spent on Projects 107 and 109, and it only identified its supply costs as qualified research expenses for Project 111. (See *Stip.* ¶¶ 51-54, 451-52, 454-64; *Stip. Exs.* 14-J, 15-J, 18-J, 19-J, 640-J.) Moreover, with respect to all six projects, Tell City did not identify any of the work of Corn Island's draftsmen as qualified research expenses, but it did claim that the time its president, vice-president, and naval architect spent on the projects constituted qualified research expenses. (See, e.g., *Stip.* ¶¶ 63-66, 465-71; *Tr. Vol.* 3 at 153-54 (providing that Corn Island has never billed Tell City for engineering services).) With Tell City's specific claims and the *Trinity* cases in mind, the Court turns to whether the evidence shows that 80% or more of Tell City's research activities regarding each separate vessel in Projects 107, 109, and 111 constituted a process of experimentation.

Project 107

[13] The Brennan Marine crane barge was not overly complex because the machinery it required was limited to a hydraulic crawler crane and the winch system. (See *Tr. Vol.* 1 at 212; *Tr. Vol.* 4 at 64-66.) The crawler crane was manufactured by a third-party and the winch system was provided by the client. (*Tr. Vol.* 1 at 205, 212, 228-29.) The crawler crane was built to be a "track crane that rode on tracking bulkheads within the barge." (*Tr. Vol.* 1 at 86, 200-01 (explaining that longitudinal bulkheads are commonly used on crane barges to provide strength under the deck for the crane).) Accordingly, the major design considerations for the vessel were tied to the crane's operation. Specifically, Tell City had to ensure that the vessel's longitudinal strength^[18] as well as its subcomponents, *623 particularly the spuds and spud wells,^[19] could "handle the forces of the crane operating[.]" (See *Tr. Vol.* 1 at 86; *Stip.* ¶ 83.) The design considerations also included adding hydraulic piping to operate the winch system, implementing the 69-foot width restriction to accommodate the steel bumpers, and satisfying the ABS rules to obtain the Great Lakes load line certification. (See *Tr. Vol.* 1 at 227-30; *Stip.* ¶ 83.)

Tell City's naval architect, Bud Johnson, had designed hundreds of custom barges by 2010, was especially familiar with the ABS rules, and "knew what target he had to hit when ... designing barges[.]" (See *Tr. Vol.* 1 at 325, 332.) (See also *Resp't Trial Ex.* 2, *Ex.* 4-R at 57-58 (explaining that although Mr. Johnson was proficient at performing stability calculations, he would "go out of house" to a third-party engineering firm to confirm his calculations and have them reproduced in a specific format).) Even so, he still had to go through an engineering process to design this vessel. (See *Tr. Vol.* 1 at 325-26.) Within a month of receiving the requirements for the vessel, Mr. Johnson had performed the

preliminary engineering calculations and submitted the load line application to the ABS, and Mr. Meunier, a Corn Island design draftsman, had created nearly all the design drawings for the vessel. (See Stip. ¶¶ 85-104, 108, 132, 498-502; Stip. Exs. 25-J to 45-J, 48-J, 72-J, 595-J to 599-J.)

Some of the design drawings required revisions to address ABS compliance issues or Brennan Marine's change orders. (See e.g., Tr. Vol. 1 at 75.) Mr. Meunier described the process of making revisions to the vessel's design as follows:

So you basically go through an engineering process of trying to figure out what the most effective way to both cost and still satisfy the requirements.... Well, I mean we are going to kick around several ideas. I mean it is what you do in engineering. Okay, we have this issue, there [are] multiple ways to solve any issue of constructability, to design flaw, but you want to find the most economical. I mean that's basically the basis of engineering. I mean you want to create something that a customer can afford to do, so you are always looking for the most economical way to still achieve what the end user needs.... [And you do that t]hrough multiple design iterations, just different ideas. I mean it is — you will look at maybe different perspectives from different individuals.

(Tr. Vol. 1 at 76-77.) Nonetheless, the Department's expert witness, Mr. Sullivan, testified that 90% of the project was designing the hull to be buoyant and stable when carrying different types of cargo, and the revisions made only minor changes that would not have affected the overall design of the vessel. (See Tr. Vol. 4 at 61-68.)

Tell City also conducted tests to verify that the vessel met the customer's project specifications, although the evidence indicates that many of the tests were routine and performed on every barge built. (See, e.g., Resp't Trial Ex. 2, Ex. 4-R at 80-82; Tr. Vol. 1 at 74, 77-79, 338-40; Tr. Vol. 3 at 56-57; Tr. Vol. 4 at 9.) Finally, there was no evidence presented to
624 identify costs associated with, or the amount of time *624 spent on, the design work, the preliminary engineering calculations, or production-related issues. (See, e.g., Tr. Vol. 1 at 231-32; Resp't Trial Ex. 2, Ex. 2-R at 204-05, Ex. 3-R at 48-49.)

Given the totality of the evidence, the Court notes that Tell City incurred some qualified research expenses in the design and construction of the Brennan Marine crane barge. Nonetheless, the Court is not persuaded that the 80% threshold was met because the evidence indicates that the vessel's construction was not complex and that its design primarily involved, similar to several of the vessels in Trinity I and II, integrating known capabilities into a single vessel. Also, many of the design revisions were in response to either Brennan Marine's requests or the ABS's comments, rather than from identifying one or more alternatives intended to eliminate uncertainty using a systematic trial and error approach to consider and test hypotheses about the vessel's design or construction. (See, e.g., Stip. Exs. 26-J, 82-J (indicating the 5th revision to the General Arrangement, changing 10" double bits to 42" kevels, was requested by the owner), 26-J, 50-J at 1333 (indicating the 4th revision to the General Arrangement, adding diagonal and tripping brackets, was due to an ABS comment).) Indeed, the design revision evidence established that some portion of Tell City's research activities constituted ordinary construction work, not scientific experimentation. Consequently, the Court finds that Tell City has not met its burden of proving by a preponderance of the evidence that at least 80% of its claimed research activities for Project 107 constituted a process of experimentation.

Project 109

[14] Project 109, another Brennan Marine crane barge, also incorporated only two pieces of machinery: a ringer crane manufactured by a third-party and a winch system supplied by the client. (See Tr. Vol. 1 at 212; Tr. Vol. 4 at 64-66.) The vessel was 50' longer than the Project 107 vessel and its ringer crane, unlike that for Project 107, could rotate a full 360 degrees. (See, e.g., Tr. Vol. 1 at 152, 167-68.) To support the ringer crane, Tell City incorporated a circular bulkhead in the hull of the vessel, added an additional bulkhead in the front of the vessel, added sponson connectors on the hull's exterior, and reduced the space between some of the vessel's internal support and stability structures (e.g., the longitudinal bulkheads and transverse frames). (See Tr. Vol. 1 at 126-27, 151-65, 200-01, 284-85; Tr. Vol. 4 at 70-72, 127.)

Tell City also incorporated some of the same components used in the Project 107 vessel, including the spuds, spud wells, rakes, and winch systems. (See Tr. Vol. 1 at 204-05; Stip. Ex. 148-J.) (Compare also Stip. Ex. 605-J (the Project 109 Specifications Sheet), with Stip. Ex. 23-J (the Project 107 Specifications Sheet).) In fact, Mr. Meunier testified that Tell City may have simply cut and pasted the Project 107 design drawings for purposes of Project 109. (See Tr. Vol. 1 at 268-69.) Additionally, the evidence suggests that Tell City may have relied on or at the very least reviewed the design drawings from one of their previous projects when designing Project 109. (See Tr. Vol. 1 at 277-79; Stip. Ex. 108-J at 2581, 2583.) The design drawings show that several revisions were made to the Project 109 vessel, such as moving

and revising frames, the location of the bulkheads, and the location of manholes. (See Stip. Exs. 110-J to 113-J, 121-J, 603-J, 604-J.) Nonetheless, Mr. Sullivan testified that moving bulkheads did not involve much redesign work, and Mr.

625 Meunier testified that moving a manhole would not have materially affected the vessel's buoyancy *625 or stability. (Tr. Vol. 1 at 264-66; Tr. Vol. 4 at 71.)

The Project 109 crane barge involved a process of experimentation with respect to design considerations for incorporating the circular bulkhead. Nonetheless, the evidence shows that the bulk of the development and construction of this vessel was simply a process of integrating known capabilities into the vessel. While Tell City explains the steps in its process, it does not identify or explain the alternatives it was considering to resolve uncertainties with respect to either its initial designs or the revisions it made. Moreover, it did not explain how it used the AutoCAD modeling software to design or redesign any aspect of the vessel. As was the case with Project 107, the evidence does not provide the costs associated with, or the amount of time spent on, the design work, the preliminary engineering calculations for the project, and production-related issues that may have led to experimentation. (See, e.g., Resp't Trial Ex. 2, Ex. 2-R at 134, 205.) Therefore, Tell City has not shown, and the Court cannot estimate, whether 80% or more of Tell City's claimed research activities for Project 109 constituted a process of experimentation.

Project 111

[15] Initially, the Project 111 Mulzer deck barge was intended to be identical to the Corn Island Hull No. 155, a 100' × 50' × 6'-6" vessel, but ultimately, the depth of the Mulzer deck barge was increased to 7.5' to accommodate the E-crane provided by the client. (See Stip. Exs. 164-J, 178-J; Resp't Trial Ex. 1; Tr. Vol. 3 at 87-90; Tr. Vol. 2 at 35-36, 46.) Despite that difference, Mr. Sullivan testified that Tell City probably used the Corn Island Hull No. 155 design drawings in developing the Mulzer deck barge. (See Tr. Vol. 4 at 88-89.)

The E-crane drove the design of this vessel. (See, e.g., Tr. Vol. 2 at 67-72 (detailing the operational parameters of the E-crane).) Its installation involved a two-step process: 1) a crane pedestal was welded to the barge while it was on land; and 2) the E-crane was installed on top of the crane pedestal post-launch. (See Tr. Vol. 2 at 35.) Tell City obtained the design drawings for the crane pedestal (and likely the crane pedestal itself) from Mulzer and used them to determine how to incorporate the crane pedestal into the barge. (See Tr. Vol. 2 at 36-37, 59-62; Stip. Ex. 171-J.) After the dimensions of the barge were adjusted and additional E-crane details were received, Tell City ran new stability calculations to ensure the vessel could fully support the E-crane's operation. (See, e.g., Tr. Vol. 2 at 55-58; Stip. Ex. 172-J.)

Once again, the Court notes that Tell City incurred some qualified research expenses in the design and construction of this vessel. The uncontroverted evidence, however, shows that Tell City neither invented nor designed the E-crane or its pedestal; instead, it designed the barge to support those structures. (See Tr. Vol. 1 at 295-96.) Moreover, even though the Mulzer deck barge and Corn Island Hull No. 155 are different vessels, the evidence indicates that Tell City modified the design of Corn Island Hull No. 155 to develop the Mulzer deck barge. (See Tr. Vol. 4 at 81-90, 134-44 (describing the similarities and differences between the two barges).) The evidence does not identify or explain how Tell City's research activities constituted even a simple trial and error process, much less exhibit a series of trials to test a hypothesis, analyze data, refine the hypothesis, and retest it to constitute a process of experimentation in the scientific sense. Accordingly, the Court finds that Tell City has not demonstrated that at least 80% of its claimed research
626 activities for Project 111 constituted a process of *626 experimentation.^[20]

CONCLUSION

In challenging the Department's denial of its refund claim, Tell City bore the burden of proving by a preponderance of the evidence that it was entitled to Indiana's research expense tax credit for the 2010 tax year. Tell City has not met its burden. Consequently, the Court affirms the Department's denial of Tell City's claim for a refund of income tax for the 2010 tax year.

[1] The Unified Stipulation of Facts is comprised of 636 separate Stipulations and Exhibits 1-J through 731-J. (See generally Unified Stipulation of Facts ("Stip.")) The Court will refer to the Stipulations as "Stip. ¶ 1," "Stip. ¶ 2," et cetera. and the Exhibits as "Stip. Ex. 1-J," "Stip. Ex. 2-J," et cetera.

[2] The trial transcript is comprised of four volumes. The Court will refer to the volumes as "Tr. Vol. 1," "Tr. Vol. 2," and so forth.

[3] Corn Island's proprietary software produces Scantling Data, which includes a variety of engineering data, such as information on the vessel's principal characteristics, longitudinal strength, estimated hull steel weight, and the dimensions of the plates, stanchions,

diagonals, and structural components. (See, e.g., Stip. Ex. 87-J; Tr. Vol. 1 at 80-81; Tr. Vol. 3 at 119-21.)

[4] The Court notes that Respondent's Trial Exhibit 2-R, David Foertsch's deposition, is missing pages 133, 135, and 136. (See generally Resp't Trial Ex. 2, Ex. 2-R.)

[5] The American Bureau of Shipping (the "ABS") is a classification society that inspects ABS-classed vessels to verify that they comply with the established ABS Rules, including the rules for the design and construction of steel barges. (See, e.g., Stip. ¶ 43; Stip. Ex. 697-J; Tr. Vol. 1 at 72-73.)

[6] When Tell City designs a new type, or class, of vessel, the first one is called "first in class." (See Tr. Vol. 1 at 67.)

[7] Prior to trial, the parties resolved all issues related to the other two first in class vessels: i.e., Project 113, a 220' × 65' × 12' crane barge built for Cooper T. Smith, and Project 115, a 65' × 26' × 10' towboat built for J.F. Brennan, Inc. (See, e.g., Stip. ¶¶ 635-36; Pet'r Post-Trial Br. ("Pet'r Br.") at 2.)

[8] The evidence does not indicate why the sensitivity test was performed. (See Stip. Ex. 156-J.)

[9] A deck barge is "like a [flatbed] pickup truck" on water because it can haul a variety of materials (e.g., sand, stone, rock, and scrap metal) or equipment. (See Tr. Vol. 1 at 59-60.)

[10] Stipulation 629 provides that Exhibit 726-J is a summary of documents related to Project 111. (Stip. ¶ 629.) Exhibit 726-J as filed on November 8, 2019, and admitted into evidence on November 19, 2019, however, is a duplicate of Exhibit 725-J that summarizes the Project 109 documents. (See Tr. Vol. 1 at 1, 5-6, 9-11; Stip. Exs. 725-J, 726-J.) Furthermore, the copy of Exhibit 726-J in Tell City's post-trial brief is not legible. (See Pet'r Br. at 22.)

[11] The Department's "Final Order Denying Refund" states it was issued on March 13, 2017, but the parties stipulated that it was issued on July 19, 2017. (Compare Stip. Ex. 4-J at 899-905, with Stip. ¶ 8.)

[12] See generally, e.g., Tell City Boatworks, Inc. v. Indiana Dep't of State Revenue, 123 N.E.3d 732 (Ind. Tax Ct. 2019); Tell City Boatworks, Inc. v. Indiana Dep't of State Revenue, 123 N.E.3d 728 (Ind. Tax Ct. 2019).

[13] Hull numbers were assigned by the contracting business based on the order in which hulls were built. (See Tr. Vol. 1 at 57.)

[14] Treasury Regulation § 1.174-2(a)(4) defines "pilot model" as "any representation or model of a product that is produced to evaluate and resolve uncertainty concerning the product during the development or improvement of the product." Treas. Reg. § 1.174-2(a)(4) (2014). This definition, however, was enacted in 2014, subsequent to the year at issue. Id.

[15] This federal term is analogous to the term "qualified research expenses" as used in Indiana Code § 6-3.1-4-1. Compare, e.g., Treas. Reg. § 1.174-2(a)(1) (2010) (amended 2014), with IND. CODE § 6-3.1-4-1 (2010) (amended 2015).

[16] The Court has held that Tell City's research activities met the uncertainty standard under IRC § 174. Because the Process of Experimentation Test incorporates the same uncertainty standard, this component of the test has been decided. See Union Carbide, 2009 WL 605161, at *80.

[17] The two vessels at issue on appeal were part of Phase 2 of the trial court proceedings that were not reported in the published Trinity I decision. See Trinity Indus., Inc. v. United States (Trinity II), 757 F.3d 400, 405-06 (5th Cir. 2014).

[18] A vessel with sufficient longitudinal strength should be able to bear its own weight, the weight of its cargo, and the forces the ocean exerts upon it without cracking or capsizing. (See Tr. Vol. 4 at 111-14.)

[19] A "spud" is a "long-pencil looking spear" that slides into the spud well, and when the spuds are dropped, "the point stick[s] to [] the riverbed or the ocean bed to hold the barge stable." (Resp't Trial Ex. 2, Ex. 3-R at 75.)

[20] The Department has argued that many of Tell City's research activities were excluded from the definition of qualified research because they involved the adaptation or duplication of an existing business component and routine or ordinary testing or inspection for quality control. (See, e.g., Resp't Post-Trial Br. at 26-27, 44-45.) Given its disposition of this case, the Court does not reach those issues.

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