

“QUALIFIED RESEARCH” UNDER IRC § 41(D)—LEGAL PRINCIPLES GOVERNING THE IDENTIFICATION OF QUALIFIED RESEARCH ACTIVITIES

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AGENDA

- The primary qualified research tests
 - Briefly review basic principles
 - Recent regulatory developments
 - Common pressure points
- Special rules for applying the primary tests
- The impact of *Suder v. Commissioner*, T.C. Memo. 2014-201
- Practical advice for identifying qualified research activities and being ready to defend them



The Primary Qualified Research Tests

PRIMARY QUALIFIED RESEARCH TESTS—§ 41(d)(1)

- To be “qualified research,” research must satisfy four tests:
 - Section 174 test
 - Technological in nature test
 - Business component test
 - Process of experimentation test
- “Such term does not include any activity described in paragraph (4).”

PRIMARY QUALIFIED RESEARCH TESTS— THE TWO EASIER TESTS

- Generally straightforward and rarely disputed.
- The technological in nature test
 - Research must be undertaken for the purpose of discovering information that is “technological in nature,” i.e., it “fundamentally relies on principles of the physical or biological sciences, engineering, or computer science.”
 - May employ existing technologies and rely on existing scientific or engineering principles.
 - Conclusively established by issuance of a patent.
- The business component test
 - Requires that the taxpayer intend that the information to be discovered be useful in the development of a new or improved business component (e.g., product, process, software, technique, etc.) of the taxpayer.
 - To be “useful” the research need only provide some level of functional improvement.
 - Care must be given to correctly defining the business component—the overall product or process, or some identifiable part, input, piece, assembly or subassembly.

PRIMARY QUALIFIED RESEARCH TESTS— THE TWO HARDER TESTS + EXCLUDED ACTIVITIES

- Generally more subjective and fact-intensive and thus more susceptible to disputes.
 - Section 174 test
 - Process of experimentation test
 - Not an excluded activity under § 41(d)(4)

SECTION 174 TEST—GENERAL PRINCIPLES

- The expenses connected with the research must be eligible for treatment as research or experimental expenditures under § 174.
- Definition of “research or experimental expenditures”—Reg. § 1.174-2
 - The information available to the taxpayer does not establish the capability or method for developing or improving a product or process or the appropriate design of a product or process (i.e., an uncertainty exists).
 - The research is intended to discover information that would eliminate this uncertainty.
- An uncertainty may exist even if the taxpayer knows that it is technically possible to achieve a goal (i.e., success is assured) but is uncertain of the method or appropriate design to use to reach that goal.
- Whether an uncertainty exists is an *objective test* that depends on the information available to the taxpayer.
- Expenditures for the acquisition or improvement of depreciable property are generally ineligible for section 174 treatment.

SECTION 174 TEST – IMPACT OF THE 2014 AMENDMENTS

- Reg. § 1.174-2 was amended in 2014 to clarify the definition of research or experimental expenditures in several respects.
 - The ultimate success, failure, sale, or use of a product is irrelevant to the section 174 determination (i.e., to counter the IRS's position in *TG Missouri*).
 - Costs may be eligible if paid or incurred after production begins but before the uncertainty is eliminated.
 - Experimental prototypes are “pilot models,” even if they are “fully functional.”
 - Introduces a shrink-back concept to allow section 174 treatment when uncertainty exists only as to a component of a product or process.
- The 2014 amendments are generally taxpayer-friendly, but questions remain.
 - When is uncertainty resolved in a highly fluid product development process?
 - Preamble, T.D. 9680: “The point at which uncertainty is resolved is based on the taxpayer's facts and circumstances, and therefore a bright-line standard is not appropriate under section 174.”
 - What is the “pilot model” when a new component is integrated into a larger product?
 - Is the new shrink-back concept a sword for the IRS or a shield for taxpayers?

SECTION 174 TEST—PRESSURE POINTS

- Lack of uncertainty concerning capability, method, or design of the product
 - No objective uncertainty based on known facts
 - See *Union Carbide v. Comm’r*: “We find that regardless of whether some of UCC's employees were not certain that the one-hole spuds would improve UCC's production process at Olefins–1, UCC had sufficient information available to it, both information gathered from its own experiences using one-hole spuds and information provided by the John Zink Co., to be certain that the one-hole spuds were capable of improving UCC's production process.”
 - Uncertainty eliminated; experimentation has ended
 - See Reg. § 1.174-2(b): “[C]osts paid or incurred in the production of a product after the elimination of uncertainty concerning the development or improvement of the product are not eligible under section 174.”
 - Uncertainty limited to a component of overall system
- Government-mandated R&D (e.g., EPA, FDA, etc.) does not qualify
- Construction and installation versus R&D costs
- Costs are for depreciable property or components thereof

PROCESS OF EXPERIMENTATION TEST— GENERAL PRINCIPLES

- Regulatory formulation (Reg. § 1.41-4(a)(5))
 - Core elements of a process of experimentation:
 - > Identification of uncertainty concerning development or improvement of business component
 - > Identification of one or more alternatives intended to eliminate that uncertainty
 - > Identification and conduct of a process of evaluating the alternatives (through, for example, modeling, simulation, or a systematic trial and error methodology)
- *Union Carbide* formulation
 - “This [test] requires the use of the scientific method sense, not merely taking steps to resolve uncertainty or to improve a product. To satisfy the process of experimentation test, the taxpayer should develop a hypothesis as to how a how alternative might be used to develop a business component, test that hypothesis in a scientific manner, analyze the results of the test, and then either refine the hypothesis or discard it and develop a new hypothesis and repeat the previous steps.”
 - *Compare* Amoco & UCAT-J projects (pass) vs. Sodium Borohydride project (fail)

PROCESS OF EXPERIMENTATION TEST— RECENTLY PROPOSED EXAMPLES (PROP. REG. § 1.41-4(A)(8))

PASSES POE TEST	FAILS POE TEST
Design, testing, and evaluation of several new load balancing algorithms	Evaluating vendor software products and applications
Systematic trial and error of several newly designed data caching algorithms	Evaluating object-oriented functions (e.g., shopping cart) in a vendor package
	Incorporating selected functions into a new web application
	Selecting separate server and round-robin algorithm to distribute workload
	Implementing ERP system (i.e., evaluating available templates, programs, etc.)

PROCESS OF EXPERIMENTATION TEST— PRESSURE POINTS

- Insufficient taxpayer evaluation and analysis. Rather, activities are mere validation and troubleshooting.
 - *Union Carbide v. Comm’r*: “There is no evidence to support UCC's assertion that it actually analyzed the data it collected beyond determining that sodium borohydride reduced acetaldehyde below 100 ppm. While petitioner argues that UCC was uncertain about the appropriate dosages or injection rates, there is no evidence that UCC experimented with dosages or injection rates or determined the optimal dosage and injection rate. UCC was merely validating that injecting sodium borohydride into the caustic scrubber would reduce acetaldehyde to on-specification levels.”
- Software maintenance, configuration, evaluation, debugging, modifications, upgrades, and code rewriting do not pass the test.
 - *Davenport v. U.S.*: “More importantly, the testing and related activities performed at this stage by IBM and Mueller was not done for purposes of identifying design alternatives but instead done to confirm or validate that the resulting System developed by IBM worked as IBM intended and met Mueller's previously identified business needs.”

EXCLUDED ACTIVITIES—§ 41(d)(4) & REG. § 1.41-4(c)(3)

➤ Common pressure points

- *Research after commercial production* – Activities occurred after taxpayer's functional and economic requirements were satisfied.
- *Duplication and adaptation* – Taxpayer engaged in reverse engineering, customization, etc.
- *Internal-use software*
 - > The IRS historically has applied exacting standards for innovativeness and technical/economic risk.
 - > Impact of the proposed IUS regulations remains to be seen.
- *Foreign research* – Costs were incurred outside the US.
- *Funded research* – Contract does not make the customer's payments contingent on success of the research (*Fairchild* and *Geosyntec*).

➤ Keep the preamble to 2003 final regulations (TD 9104) in mind

- “As stated above, the Treasury Department and the IRS believe that the research after commercial production exclusion (as well as the adaptation and duplication exclusions) do not cover research activities ... so long as such trials satisfy the requirements for qualified research.”

SPECIAL RULES FOR APPLYING PRIMARY TESTS

- The primary tests “shall be applied separately with respect to each business component of the taxpayer.” § 41(d)(2)(A).
- IRS interpretation: “Nexus”
 - “Identify and list each new or improved business component for which the QREs are being claimed.”
 - “For each business component identified in item a, provide the QRE wages by employee, the QRE supplies, and the contract QREs by contract, and reconcile the QREs by business component to the total QREs on your Form 6765.”
 - “Does the claim rely on any oral testimony or employee surveys to determine the QREs in the credit years?”
 - “Does the claim rely on estimates or extrapolations to determine any portion of the QREs in the credit year?”

SPECIAL RULES FOR APPLYING PRIMARY TESTS

- “Any plant process...for commercial production of a business component shall be treated as a separate business component (and not part of the business component being produced).” § 41(d)(2)(C).
 - “This indicates that Congress intended to allow taxpayers research credits for research performed to improve their production processes, but Congress did not intend for all of the activities that were associated with the production process to be eligible for the research credit if the taxpayer was performing research only with respect to the process, not the product.” *Union Carbide v. Comm’r*.
- The shrinking-back rule of Reg. § 1.41-4(b)(2)—Sword or shield?
 - *Compare* Reg. § 1.41-4(b)(2): “The shrinking-back rule is not itself applied as a reason to exclude research activities from credit eligibility.”
 - *With Union Carbide v. Comm’r*: “To the extent that petitioner has included production activities as part of the business component, we may apply the shrinking-back rule and apply the qualified research tests to the most significant subset of elements of the process that satisfies the qualified research tests, which we find to be the subset of activities that relate primarily to the testing of the Amoco technology.”



Impact of *Suder* *v. Commissioner*

SUDER v. COMMISSIONER, T.C. 2014-201

- Involved research credit claims of S Corp telephone manufacturer ESI for 2004-07.
- CEO Suder was the “chief idea guy” and “product visionary.”
- ESI employed a systematic product development process (Concept→Hardware→Software→Testing).
- Parties stipulated to 12 of 76 representative projects.
- SVP product development Wende derived qualified services allocations
 - 75% for CEO, 100% for SVP, 100% for engineers, product managers, etc., 5-10% for QC, shipping, etc.
- 2/3 of claimed wage QREs from CEO Suder (\$8.7-\$11MM in salary)
- IRS disallowed claims and imposed penalties.
- 3-week trial, 3.5k pages of testimony & 170k pages of exhibits.

***SUDER v. COMMISSIONER*, T.C. MEMO. 2014-201**

➤ Nexus exodus!

- On the basis of SVP Wende’s testimony, the Tax Court rejected the IRS’s argument that ESI “failed to provide any *nexus* between the expenses claimed and qualified research activities, if any, performed.”
- The testimony of a knowledgeable and credible witness was sufficient to establish percentages of qualified wages of employees conducting research without allocation among projects.
- This contentious issue, referred to by the IRS as the “nexus” requirement, has not previously been addressed by a court.
- Applied *Cohan v. Commissioner*, 39 F.2d 540, 543-544 (2d Cir. 1930) (the “Cohan rule”), and *US v. McFerrin*, 570 F.3d 672, 679 (5th Cir. 2009), in a situation in which the IRS has claimed their estimation principles do not apply.

SUDER v. COMMISSIONER, T.C. MEMO. 2014-201

➤ Other *Suder* goodies

- Projects that the IRS argued were “routine engineering” or “duplications” of existing products were found to qualify because of uncertainty and systematic development process, even though they were not rocket-science type projects.
 - > “Neither section 41 nor the regulations thereunder require taxpayers to ‘reinvent the wheel.’”
- Activities of CEO Suder were qualified services (75% claimed).
 - > Not excluded simply because he was above a first-line manager.
 - > CEO spent much of his time “in the trenches,” brainstorming and actively participating in engineering and testing.
- Patent application expenses held qualified (no analysis).

➤ Unreasonable compensation

- Court held that a substantial portion of the CEO’s salary (\$8.7-11MM) was unreasonable compensation under section 174(e).
- First reported case in which this section 174(e) issue was addressed.
- Primarily an issue for closely-held companies.



Practical Advice for Identifying Qualified Research

CLAIM PREPARATION

- Claiming the credit is not easy.
- Requires dedicated resources and systems for—
 - Identifying qualified research activities
 - Identifying and quantifying QREs
 - Computing the credit
 - Gathering the records and data to substantiate the credit
- Considerable manpower, cooperation, resources, and time are required.
- The sophistication and focus of the methodology depends on your business, the value of the credit, and expected scrutiny.

CLAIM PREPARATION

- Original versus amended returns.
- All factors equal, the closer in time to the R&D the better.
- Leverage available tools:
 - Statistical sampling – Rev. Proc. 2011-42
 - Project and time tracking software programs
 - Post hoc project tracking
 - > Project lists and allocations
 - > Timelines and estimates
 - RCRAAs – Notice 2004-11
 - PFAs re appropriate methodology – Rev. Proc. 2009-14
 - Informal agreements with your exam team

CLAIM PREPARATION

- The best defense is a good offense.
- Data gathering:
 - Taxpayers armed with contemporaneous documents are best positioned.
 - > No particular type required; documents created in normal course of your R&D are best.
 - Monthly reports
 - Capital authorizations
 - Lists of patents and patent applications (and similar technical certifications)
 - Project lists
 - Consider the section 41(d) tests when gathering your documents.

CLAIM PREPARATION

➤ Data gathering

- Consider all available sources of information: public information, tracking systems, internal records, site visits, in-house experts, etc.
- Leverage technical and accounting personnel.
 - > Explain QRE definition with emphasis on avoiding any preconceived notions of what “research” must be
 - > Establish a pipeline for future project information and changes in department activities
- Memorialize interviews and surveys, but recognize they may be requested and privileges (e.g., attorney-client, work product) may not be available.

➤ Data retention: you may need to override normal document retention policies.

DEFENDING YOUR CLAIM IN AUDIT

- Anticipate and prepare for audit issues.
- Maintain a good rapport with your exam team.
 - Be responsive and considerate.
 - Pick your battles, but don't be afraid to stand your ground where appropriate.
- Consider statistical and judgment samples to streamline the audit.
- Consider other ways to focus attention on the big-ticket issues.
- Remember that the facts are your friend.
- Prepare your witnesses; don't put them on cold.
- Identifying additional QREs may provide additional leverage but may require a formal claim.
- Recognize that the consistency requirement is a 2-way street.



Questions?

Thank You.



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