OFFICE OF
CHIEF COUNSEL

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, D.C. 20224

June 16, 2000

Number: **200038013** CC:DOM:FS:P&SI
Release Date: 9/22/2000
UILC: 41.50-00

INTERNAL REVENUE SERVICE NATIONAL OFFICE CHIEF COUNSEL ADVICE

MEMORANDUM FOR LARRY C. LETKEWICZ
CC:MSR:POD:CHI

FROM: HARVE M. LEWIS
CHIEF CC:DOM:FS:P&SI

SUBJECT: Research Credit

This Chief Counsel Advice responds to your memorandum dated May 1, 2000. Chief Counsel Advice is not binding on Examination or Appeals and is not a final case determination. This document is not to be cited as precedent.

Field Service Advice is Chief Counsel Advice and is open to public inspection pursuant to the provisions of section 6110(i). The provisions of section 6110 require the Service to remove taxpayer identifying information and provide the taxpayer with notice of intention to disclose before it is made available for public inspection. Sec. 6110(c) and (i). Section 6110(i)(3)(B) also authorizes the Service to delete information from Field Service Advice that is protected from disclosure under 5 U.S.C. § 552 (b) and (c) before the document is provided to the taxpayer with notice of intention to disclose. Only the National Office function issuing the Field Service Advice is authorized to make such deletions and to make the redacted document available for public inspection. **Accordingly, the Examination, Appeals, or Counsel recipient of this document may not provide a copy of this unredacted document to the taxpayer or their representative.** The recipient of this document may share this unredacted document only with those persons whose official tax administration duties with respect to the case and the issues discussed in the document require inspection or disclosure of the Field Service Advice.

LEGEND

Date 1=
Date 2=
Date 3=

ISSUES

1. What are the requirements of the discovery test for the years in issue?

2. What are the requirements of the process of experimentation test for the years in issue?

FACTS

In its petition to the U.S. Tax Court for the taxable periods Date 1, Date 2, and Date 3, Taxpayer made an affirmative claim for credits for increasing research activities under I.R.C. § 41 relating to internal use software. During the informal discovery phase of this case, taxpayer raised some questions about the applicability of the discovery test and the process of experimentation test as described in United Stationers, Inc. v. United States, 163 F.3d 440, 445 (7th Cir. 1998), Norwest Corporation v. Commissioner, 110 T.C. 454 (1998) (appeal docketed sub nom. Wells Fargo & Co. v. Commissioner, Nos. 99-3878, 99-3883 (8th Cir. Sep. 29, 1999), and proposed regulations under section 41 published in the Federal Register on December 2, 1998 (63 FR 66503). Taxpayer claims that the proposed regulations provide a less stringent standard than the courts in both United Stationers and Norwest. You have asked us to respond to Taxpayer's claim regarding the discovery test and the process of experimentation test for the years in issue and to explain the Service's position relating to these tests so that both parties may move forward in this phase of the litigation.

LAW AND ANALYSIS

Section 41 allows taxpayers a credit against tax for increasing research activities. Generally, the credit is an incremental credit equal to the sum of 20 percent of the excess (if any) of the taxpayer's "qualified research expenses" for the taxable year over the base amount, and 20 percent of the taxpayer's basic research payments.

Section 41(b)(1) provides that the term "qualified research expenses" means the sum of the following amounts which are paid or incurred by the taxpayer during the taxable year in carrying on any trade or business of the taxpayer: (A) in-house research expenses, and (B) contract research expenses.

Section 41(d)(1) provides that the term "qualified research" means research–

> (A) with respect to which expenditures may be treated as expenses under § 174,
>
> (B) that is undertaken for the purpose of discovering information (i) that is technological in nature, and (ii) the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, (the "discovery test"), and
>
> (C) substantially all of the activities of which constitute elements of a process of experimentation for a purpose described in § 41(d)(3), (the "process of experimentation test").

Such term does not include any activity described in section 41(d)(4).

Section 41(d)(3)(A) provides that, for purposes of section 41(d)(1)(C), research is to be treated as conducted for a qualified purpose if it relates to (i) a new or improved function, (ii) performance, or (iii) reliability or quality. Section 41(d)(3)(B) provides that research is not to be treated as conducted for a qualified purpose if it relates to style, taste, cosmetic, or seasonal design factors.

Section 41(d)(4) provides that the term "qualified research" does not include any of the following: research after commercial production; adaptation of an existing business component; duplication of an existing business component; surveys, studies, etc.; research with respect to certain computer software; foreign research; research in the social sciences, etc.; and funded research.

In the Tax Reform Act of 1986 (the 1986 Act), Congress amended the definition of the term "qualified research". Before the amendment, the term "qualified research" had the same meaning as the term "research or experimental" under section 174. The legislative history to the 1986 Act indicates that Congress believed that taxpayers had applied the 1981 Act definition too broadly with some taxpayers claiming the credit for virtually any expense relating to product development. Further, Congress concluded that it was appropriate and desirable for the statutory research credit provisions to include an express definition of the term "qualified research." Thus, in 1986, Congress narrowed the scope of the credit to technological advances in products and processes, and revised and limited the definition of the term "qualified research" by establishing additional qualifying requirements and adding several excluded activities. S. Rep. No. 99-313, at 694-95 (1986); H.R. Rep. No. 99-426, at 178 (1985).

The legislative history to the 1986 Act states that the purpose of enacting the credit was to encourage business firms to perform the research necessary to increase the innovative qualities and efficiency of the U.S. economy. S. Rep. No. 99-313, at 694; H.R. Rep. No. 99-426, at 177. Because the research credit is intended to provide an incentive for business firms to increase their expenditures for research to obtain new knowledge through a scientific process of experimentation, the credit is not to be applied too broadly or in a manner such that virtually any expense relating to product development is eligible for the credit. See S. Rep. No. 99-313, at 694-95; H.R. Rep. No. 99-426, at 178.

The determination of whether the research is undertaken for the purpose of discovering information that is technological in nature depends on whether the process of experimentation utilized in the research fundamentally relies on principles of the physical or biological sciences, engineering, or computer science -- in which case the information is deemed technological in nature -- or on other principles, such as those of economics -- in which case the information is not to be treated as technological in nature. H.R. Conf. Rep. No. 99-841, at II-71.

With specific reference to the field of computer science, the Conference Report notes that research does not rely on the principles of computer science merely because a computer is employed. Research may be treated as undertaken to discover information that is technological in nature, however, if the research is intended to expand or refine existing principles of computer science. H.R. Conf. Rep. No. 99-841, at II-71 n.3 (1986).

DISCOVERY TEST

Two recent court decisions have addressed the definition of qualified research for purposes of section 41(d) and have determined that the statutory definition of qualified research imposes an objective discovery requirement. On June 29, 1998, the Tax Court issued its opinion in Norwest Corporation v. Commissioner. In Norwest, the Tax Court concluded that:

> [t]he legislative history of section 41 dictates that the knowledge gained from the research and experimentation must be that which exceeds what is known in the field in which the taxpayer is performing the research and experimentation.... The fact that the information is new to the taxpayer, but not new to others, is not sufficient for such information to come within the meaning of discovery for purposes of this test. The purpose of the R&E credit was to stimulate capital formation and improve the U.S. economy--not merely the taxpayer's business.

In United Stationers, Inc. v. United States, the Seventh Circuit concluded that:

> qualifying research must go beyond the current state of knowledge in that field--expand or refine its principles.... Therefore, in the context of § 41(d)(1)(B)(i), discovery demands something more than mere superficial newness; it connotes innovation in underlying principle.

Further, in recent legislative histories, Congress referred to the discovery test of section 41(d). The Conference Report to Tax and Trade Relief Extension Act of 1998 (the 1998 Act) noted that:

> evolutionary research activities intended to improve functionality, performance, reliability, or quality are eligible for the credit, as are research activities intended to achieve a result that has already been achieved by other persons but is not yet within the common knowledge (e.g., freely available to the general public) of the field (provided that the research otherwise meets the requirements of § 41, including not being excluded by subsection (d)(4)).

H.R. Conf. Rep. No. 105-825, at 1548 (1998) (emphasis added).

The Conference Report to the Tax Relief Extension Act of 1999 (the 1999 Act) provides that :

> [e]mploying existing technologies in a particular field or relying on existing principles of engineering or science is qualified research, if such activities are otherwise undertaken for purposes of discovering information and satisfy the other requirements under section 41.

PROCESS OF EXPERIMENTATION TEST

In both United Stationers and Norwest, the courts also addressed the process of experimentation test. In Norwest, the Tax Court determined that "the process of experimentation test is aimed at eliminating uncertainty about the technical ability to develop the product--as opposed to uncertainty as to whether the product can be developed within certain business or economic constraints, even though the taxpayer knew that it was technically possible to develop it." Norwest, 110 T.C. at 496.

Citing Norwest, the Seventh Circuit, in United Stationers, asserted that the portion of the Conference Report to the 1986 Act explaining the term “process of experimentation,” “suggests that qualifying research must from its outset involve some technical uncertainty about the possibility of developing the product.” United Stationers, 163 F.3d at 446.

The Conference Report to the 1986 Act provides that the term “process of experimentation” means:

> A process involving the evaluation of more than one alternative designed to achieve a result where the means of achieving that result is uncertain at the outset. This may involve developing one or more hypotheses, testing and analyzing those hypotheses (through, for example, modeling or simulation), and refining or discarding the hypotheses as part of a sequential design process to develop the overall component.
>
> Thus, for example, costs of developing a new or improved business component are not eligible for the credit if the method of reaching the desired objective (the new or improved product characteristics) is readily discernible and applicable as of the beginning of the research activities, so that true experimentation in the scientific or laboratory sense would not have to be undertaken to develop, test, and choose among viable alternatives. On the other hand, costs of experiments undertaken by chemists or physicians in developing and testing a new drug are eligible for the credit because the researchers are engaged in scientific experimentation.

H.R. Conf. Rep. No. 99-841, at II-71 [Emphasis added].

PROPOSED REGULATIONS IN ACCORDANCE WITH OTHER AUTHORITY

On December 2, 1998, the Service published in the Federal Register proposed regulations relating to the definition of qualified research under section 41(d) and the computation of the research credit under section 41(c) (63 FR 66503). In addition, on January 2, 1997, the Service published in the Federal Register proposed regulations under section 41 describing when computer software that is developed by (or for the benefit of) a taxpayer primarily for the taxpayer's internal use can qualify for the credit for increasing research activities (62 FR 81). The 1998 proposed regulations set forth the requirements for qualified research, including the discovery test and the process of experimentation test. See §§ 1.41-4(a)(3) and (5) of the proposed regulations. While these provisions of the proposed regulations are proposed to be effective after the date final regulations are published in the Federal Register, these proposed regulations represent the Service's official position on all issues covered by the regulations for all tax years after December 31, 1985.

Section 1.41-(a)(3) of the proposed regulations provides that "the term discovering information means obtaining knowledge that exceeds, expands, or refines the common knowledge of skilled professionals in a particular field of technology or science." Section section 1.41-4(a)(8) Ex. 6 of the proposed regulations provides an illustration of this rule:

> Y successfully builds a bridge that can sustain the greater traffic flow. Thereafter, Z seeks to build a bridge that can also sustain such greater traffic flow. The technology used by Y to build its bridge is a closely guarded secret that is not known to Z and remains beyond the common knowledge of skilled professionals in the relevant technological fields. . . . Z's activities to develop the technology to build the bridge may be qualified research within the meaning of section 41(d)(1) and paragraph (a) of this section, even if it so happens that the technology used by Z to build its bridge is similar or identical to the technology used by Y.

With respect to the process of experimentation test, section 1.41-4(a)(5) of the proposed regulations states:

> [A] process of experimentation is a process to evaluate more than one alternative designed to achieve a result where the means of achieving that result are uncertain at the outset. A process of experimentation in the physical or biological sciences, engineering, or computer science requires that the taxpayer --

(i) Develop one or more hypotheses designed to achieve the intended result;

(ii) Design an experiment to test and analyze those hypotheses;

(iii) Conduct the experiment and record the results; and

(iv) Refine or discard the hypotheses as part of a sequential design process to develop or improve the business component.

Taxpayer disputes the Seventh Circuit's and the Tax Court's interpretations of the discovery and the process of experimentation tests. The Taxpayer believes that the United Stationers and the Norwest decisions are inconsistent with the Service's position in the proposed regulations published in the Federal Register for December 2, 1998, and the intent of Congress as expressed in Conference Reports to the 1998 and the 1999 Acts. We disagree.

As stated above, for taxable years beginning after December 31, 1985, the qualified expenses of a research project are eligible to be included in the research credit computation only if the project is qualified research, that is, the project must meet all of the requirements of section 41(d)(1) and must not be excluded by section 41(d)(3)(B) or (d)(4). Section 41(d)(1) contains the three principal requirements for determining if product development activities constitute qualified research. These requirements are (1) the "section 174 test," (2) the "discovery test," and (3) the "process of experimentation test." See Norwest, 110 T.C. at 488-89 (delineating a four-part test by treating the "business component" element of the "discovery test" as a separate, self-contained test).

To qualify for the research credit, section 41(d) requires that a taxpayer undertake research for the purpose of discovering information that is technological in nature, and the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, this is the second requirement for qualified research. This "discovery test" contains two distinct elements. First, section 41(d)(1)(B)(i) provides that research must be undertaken for the purpose of discovering information that is technological in nature; second, secion 41(d)(1)(B)(ii) provides that the application of the discovered information must be intended to be useful in the development of a new or improved business component of the taxpayer.

It is the interpretation of the first part of the "discovery test" that the Taxpayer disputes. Section 1.41-4(a)(3) of the proposed regulations defines the term discovering information as obtaining knowledge that exceeds, expands, or refines the common knowledge of skilled professionals in a particular field of technology or science. We believe that section 41 conditions credit eligibility on an attempt to discover information that goes beyond the common knowledge of the field. We also believe that this requirement is consistent with section 41(d), the legislative

history to the 1986 Act, the decisions of the Seventh Circuit in United Stationers, Inc. v. United States, 163 F.3d 440, 445 (7th Cir. 1998) and the Tax Court in Norwest Corporation v. Commissioner, 110 T.C. 454 (1998) (appeal docketed sub nom. Wells Fargo & Co. v. Commissioner, Nos. 99-3878, 99-3883 (8th Cir. Sep. 29, 1999), and the legislative histories of the 1998 and 1999 Acts.

Taxpayer also argues that there is no basis for the Norwest court's interpretation of the process of experimentation test in the statute or the legislative history. We disagree.

The legislative history to the 1986 Act indicates that the purpose of the "process of experimentation" test is to provide the methodology to test different hypotheses to achieve a desired objective where the method of achieving the objective is uncertain at the outset. Clearly, if the method of reaching the desired object was discernable at the outset, there would be no qualified research. Thus, a taxpayer's process of experimentation is its methodology used to address the technical uncertainties in developing or improving a business component.

The "process of experimentation test" presupposes a scientific methodology that entails the evaluation of more than one alternative to achieve a result where the means of achieving that result is uncertain at the outset. The more alternatives considered by the taxpayer, the more structured the process of experimentation necessarily becomes through a continuous development of hypotheses that require testing and analysis until the research objective is achieved. Thus, the more hypotheses that are developed, tested, and analyzed, the more likely the project will satisfy the "process of experimentation test." See Norwest, 110 T.C. at 496; United Stationers, 163 F.3d at 446.

Based on the legislative history language and the proposed regulations it is clear that a primary purpose for the "process of experimentation test" is to address the technical uncertainties as to the means or method of achieving a desired research result. See United Stationers, 163 F.3d at 446; Norwest, 110 T.C. at 496. Thus, while the "discovery" and the "process of experimentation" requirements of section 41(d)(1) do not require revolutionary advances in technology or science, they do require that the taxpayer address technical uncertainties in developing a new or improved business component.

Taxpayer maintains that in Norwest the Tax Court incorrectly interpreted the legislative history relating to the "process of experimentation test." Taxpayer argues that, in the legislative history to the 1986 Act, Congress did not require uncertainty concerning the capability of achieving a desired result. Rather, Congress intended that the process of experimentation test was intended to address the means of achieving the desired result.

Taxpayer's argument fails because Congress clearly intended that taxpayers performing qualified research would use a process of experimentation to determine the design of a business component where the design was uncertain at the outset. Section 1.41-4(a)(5) of the proposed regulations states that a process of experimentation is a process to evaluate more than one alternative designed to achieve a result where the means of achieving that result are uncertain at the outset. Thus, under the proposed regulations, section 41conditions credit eligibility to research that involves a process of experimentation to determine the design of a business component where the technical ability to achieve the design was uncertain at the outset. We believe that this requirement is consistent with section 41(d), the legislative history to the 1986 Act, the decisions of the Seventh Circuit in United Stationers, Inc. v. United States, 163 F.3d 440, 445 (7th Cir. 1998) and the Tax Court in Norwest Corporation v. Commissioner, 110 T.C. 454 (1998) (appeal docketed sub nom. Wells Fargo & Co. v. Commissioner, Nos. 99-3878, 99-3883 (8th Cir. Sep. 29, 1999), and the legislative histories of the 1998 and 1999 Acts.

Finally, under Golson v. Commissioner, 54 T.C. 742, 757 (1970), aff'd, 445 F.2d 985 (10th Cir. 1971) cert. denied, 404 U.S. 940 (1971), if this case is appealable to the Seventh Circuit, the Tax Court will treat relevant Seventh Circuit authority, including United Stationers, as binding in reaching its decision.

CASE DEVELOPMENT, HAZARDS AND OTHER CONSIDERATIONS

Please call if you have any further questions.

DEBORAH A. BUTLER
ASSISTANT CHIEF COUNSEL
FIELD SERVICE DIVISION
BY: HARVE M. LEWIS, CHIEF
PASSTHROUGHS & SPECIAL INDUSTRIES
(FIELD SERVICE DIVISION)