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Conveyance Type

- Assignment
- License
- Merger
- Security Agreement
- Change of Name
- Other **CONFIRMATORY LICENSE**

U.S. Government
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Conveying Party(ies)

Mark if additional names of conveying parties attached

Name (line 1) **ARTHUR D. LITTLE, INC.** Execution Date: Month Day Year
 Name (line 2)
 Second Party Name (line 1)
 Name (line 2)
 Execution Date: Month Day Year

Receiving Party

Mark if additional names of receiving parties attached

Name (line 1) **UNITED STATES DEPARTMENT OF ENERGY**
 Name (line 2)
 Address (line 1) **1000 INDEPENDENCE AVENUE, S.W.**
 Address (line 2)
 Address (line 3) **WASHINGTON** City **D. C. USA** State/Country **20585** Zip Code
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PATENT
REEL: 010788 FRAME: 0837

Correspondent Name and Address

Area Code and Telephone Number [630] 252-2393

Name ROBERT J. FISHER

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Address (line 2) OFFICE OF INTELLECTUAL PROPERTY LAW

Address (line 3) 9800 SOUTH CASS AVENUE

Address (line 4) ARGONNE, ILLINOIS 60439

Pages Enter the total number of pages of the attached conveyance document including any attachments. # 7

Application Number(s) or Patent Number(s) Mark if additional numbers attached

Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

Patent Number(s)

09/184,387						

If this document is being filed together with a new Patent Application, enter the date the patent application was Month Day Year

Patent Cooperation Treaty (PCT)

Enter PCT application number only if a U.S. Application Number has not been assigned.

PCT		PCT		PCT	
PCT		PCT		PCT	

Number of Properties

Enter the total number of properties involved. # 01

Fee Amount

Fee Amount for Properties Listed (37 CFR 3.41): \$

Method of Payment: Enclosed Deposit Account

Deposit Account (Enter for payment by deposit account or if additional fees can be charged to the Deposit Account Number: #

Authorization to charge additional fees: Yes No

Statement and Signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Charges to deposit account are authorized, as indicated herein.

Mark P. Dvorscak
Name of Person Signing

MP Dvorscak
Signature

5-11-00
Date

CONFIRMATORY LICENSE

(Large Business - Identified Waiver)

Title : Method and Apparatus for Converting Hydrocarbon Fuel Into Hydrogen Gas and Carbon Dioxide

Inventor(s) : Lawrence G. Clawson, William L. Mitchell, Jeffrey M. Bentley and Johannes H.J. Thijssen

Serial No. : 09/184,387

Filing Date (U.S.): **November 2, 1998**

Contractor: *Arthur D. Little, Inc.*

DOE Case No.: S- 95,664

DOE Contract No.: *DE-AC02-92CE50343*

Identified Waiver No: *W(I)97-021*

Foreign Applications filed in or intended to be filed at Contractor's expense in (countries):

A waiver of Government rights in the above-identified Subject Invention having been granted by the U.S. Department of Energy (DOE) to the Contractor, the effective date of said waiver is August 28, 1997.

Accordingly, this document is confirmatory of the paid-up license required to be granted to the Government under 41 CFR 9-9.109-6 in the Subject Invention, patent application and any resulting patent as well as any continuation, divisional, reissue, supplemental or continuation-in-part thereof, and of all other rights reserved to the Government under 41 CFR 9-9.109-6, said license and other rights including the following:

(1) Government License and Inspection Right

With respect to any Subject Invention in which title has been waived to the Contractor, the Federal Government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the Subject Invention throughout the world;

The Government is hereby granted the irrevocable power to inspect and make copies of the above-identified patent application.

(2) Conveyance Terms and Conditions - Domestic

(a) Subject to the minimum rights reserved to the Contractor in paragraph (8) herein, the Contractor agrees to convey to the Government, upon request, the entire domestic right, title, and interest in the above-identified invention when the Contractor:

- (i) decides not to continue prosecution of the patent application filed on the above-identified invention;

- (ii) at any time, no longer desires to retain title in the above-identified invention; or
- (iii) fails to have a United States patent application filed on the invention in accordance with the terms and conditions of paragraph (4) herein.

(b) Conveyances requested pursuant to the above subparagraphs (2)(a)(i-iii) shall be made by delivering to the DOE Patent Counsel duly executed instruments and such other papers as are deemed necessary to vest in the Government the entire right, title, and interest in the invention to enable the Government to apply for and prosecute patent applications covering the invention in this country, or otherwise establish its ownership of the invention.

(3) Conveyance Terms and Conditions - Foreign

(a) Subject to the minimum rights reserved to the Contractor in paragraph (8) herein, the Contractor agrees to convey to the Government, upon request, the entire right, title, and interest in the above-identified invention in any foreign country if the Contractor:

- (i) does not elect pursuant to paragraph (5) herein to retain such rights in the foreign country; or
- (ii) fails to have a patent application filed in the foreign country on said invention in accordance with paragraph (5) herein, or decides not to continue prosecution or not to pay any maintenance fees covering such invention. To avoid forfeiture of the patent application or patent, the Contractor shall, not less than sixty (60) days before the expiration period for any action required by the foreign Patent Office, notify the DOE Patent Counsel of such failure or decision, and deliver to the DOE Patent Counsel the executed instruments necessary for the conveyance specified in this paragraph.

(b) Conveyances requested pursuant to the above subparagraphs (3)(a)(i) and (3)(a)(ii) shall be made by delivering to the DOE Patent Counsel duly executed instruments and such other papers as are deemed necessary to vest in the Government the entire right, title, and interest in the invention to enable the Government to apply for and prosecute patent applications covering the invention in a foreign country, or otherwise establish its ownership of the invention.

(4) Filing of Patent Application - Domestic

(a) The Contractor shall have a domestic patent application for the above-identified Subject Invention filed within six (6) months after the effective date of this waiver. The Contractor shall promptly notify the DOE Patent Counsel of any decision not to file such an application.

(b) For the above-identified invention for which a patent application has been filed by the Contractor, the Contractor shall:

- (i) within two (2) months after the filing or within two (2) months after submission of an invention disclosure pursuant to the requirements of the above contract if the patent application previously has been filed, deliver to the DOE Patent Counsel a copy of the application as filed including the filing date and serial number;
- (ii) include the following statement in the second paragraph of the specification of the application and any patents issued on the identified invention, "The Government has rights in this invention pursuant to Contract No. DE-AC02-92CE50343 awarded by the U. S. Department of Energy";
- (iii) provide the DOE Patent Counsel with a copy of any patent issued on the application within two (2) months after such patent issues; and
- (iv) not less than thirty (30) days before the expiration of the response period for any action required by the Patent and Trademark Office, notify the DOE Patent Counsel of any decision not to continue prosecution of the application and deliver to the DOE Patent Counsel executed instruments granting the Government a power of attorney.

(c) If the Contractor at any time prior to the filing of the application elects not to retain the rights waived for the above-identified invention, the Contractor shall inform the DOE Patent Counsel promptly in writing of the date and identity of any sale, or placing on sale, public use, or public disclosure of the invention which may constitute a statutory bar under 35 U.S.C. 102, which was authorized by or known to the Contractor or any contemplated action of this nature.

(5) Filing of Patent Applications - Foreign

(a) With respect to the rights waived for the above-identified invention in a foreign country, the Contractor shall have a patent application filed on the invention in that country in accordance with applicable statutes and regulations and within one of the following periods:

- (i) eight (8) months from the date of a corresponding United States application filed by the Contractor, or if such an application is not filed, six (6) months from the date the invention is submitted as a disclosure pursuant to the requirements of the above contract;

- (ii) six (6) months from the date a license is granted by the Commissioner of Patents and Trademarks to file foreign applications where such filing has been prohibited by security reasons; or
- (iii) such longer period as may be approved by the DOE Patent Counsel.

(b) The Contractor shall notify the DOE Patent Counsel promptly of each foreign application filed and upon written request shall furnish an English version of the application without additional compensation.

(6) Other Terms and Conditions of Waived Rights

(a) Reporting on Utilization of Subject Inventions

The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of the Subject Invention on efforts at obtaining such utilization that are being made by the Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, data or first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with a march-in proceeding undertaken by DOE in accordance with paragraph (b) of this clause. To the extent data or information supplied under this section is considered by the Contractor, its licensee or assignee to be privileged and confidential and is so marked, DOE agrees that, to the extent permitted by 35 USC 202 (c)(5), it will not disclose such information to persons outside the Government.

(b) March-in-Rights

The Contractor agrees that with respect to the Subject Invention in which it has acquired title, DOE has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of DOE, to require the Contractor, an assignee or exclusive licensee of the subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that;

(1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the Subject Invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees.

(4) Such action is necessary because the agreement required by paragraph (c) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell the Subject Invention in the United States is in breach of such agreement.

(c) Preference for United States Industry

Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell the Subject Invention in the United States unless such person agrees that any products embodying the Subject Invention or produced through the use of the Subject Invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(d) Non-exclusive License of the State of Illinois

The State of Illinois shall have a paid-up irrevocable, non-exclusive license to make, use and sell subject inventions which are under DOE Contract No. DE-AC02-92CE50343, by or on behalf of the State of Illinois. For purposes of this Agreement, "subject invention" means any invention or discovery of DOE's contractor under DOE Contract No. DE-AC02-93CE50343, which is conceived or first actually reduced to practice in the course or under said contract, and includes any art, method process, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plants, whether patented or unpatented under the Patent Laws of the United States of America or any foreign country.

(e) U.S. Competitiveness

The Contractor agrees that any products embodying any waived invention or produced through the use of any waived invention will be manufactured substantially in the United States unless the Contractor can show to the satisfaction of the DOE that it is not commercially feasible to do so. In the event that DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., recoupment of the Government's investment, etc. The Contractor agrees that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements. Should the Contractor or successor in interest receiving rights in the invention under go a change in ownership amounting to a controlling interest, then the waiver, assignment, license or other transfer or rights in the waived invention is suspended until approved in writing by the DOE.

(f) Third Party Licensing for Transportation Vehicle Applications

The Contractor agrees that it will grant responsible third parties a non-exclusive license for transportation vehicle applications to make, use and sell products embodying the subject invention and to practice the methods of such invention throughout the world on reasonable terms and conditions,. It is also understood that circumstances may arise where technical and commercial development of the invention in such transportation vehicle applications may be better served by narrowing the nonexclusivity of the license. Accordingly, in the event the Contractor and DOE mutually agree to such a determination, the nonexclusive licensing requirement of this agreement may be modified upon written approval of DOE Field Patent Counsel. In any event, upon request of DOE Patent Counsel, Contractor will forward to DOE, not more than once per year, a report identifying all licenses for the subject inventions as well as any relevant information as may be necessary to verify compliance with the objectives of the patent waiver.

(7) Terminations

(a) The waiver granted to the Contractor in connection with the Subject Invention, or any retention of rights by the Contractor herein may, subject to the minimum rights reserved in paragraph (8) hereof, be terminated at the discretion of the Secretary or his/her designee in whole or in part, if the request for waiver or retention of rights by the Contractor is found to contain false material statements or non-disclosure of material facts, and such were specifically relied upon in reaching the waiver determination or the agreement to the retention of rights by the Contractor.

(b) Any waiver of the rights as applied to the above-identified Subject Invention may be terminated at the discretion of the Secretary or his/her designee, in whole or in part, if the Contractor fails to comply with the provisions set forth in paragraphs (4) or (6) herein and such failure is determined by the Secretary or his/her designee to be material and detrimental to the interests of the United States and the general public.

(c) Prior to terminating any waiver of rights under paragraph (7)(a) or (7)(b) of this clause, the Contractor will be given written notice of the intention to terminate the waiver of rights, the extent of such proposed termination and the reasons therefor, and a period of 30 days, or such longer period as the Secretary or his/her designee shall determine for good cause shown in writing, to show cause why the waiver of rights should not be so terminated.

(d) All terminations of waivers of rights under paragraph (7)(a) shall be subject to the rights granted in paragraph (8) of this clause, and termination shall normally be partial in nature, requiring the Contractor to grant nonexclusive or partially exclusive licenses to responsible applicants upon terms reasonable under the circumstances.

(8) Minimum Contractor License

There is reserved to the Contractor an irrevocable, nonexclusive, paid-up license in each patent application filed in any country on the above-identified invention and any resulting patent in which the Government acquires title. The license shall extend to the Contractor's domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and shall include the

right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license shall be transferable only with approval of DOE except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(9) Reservation of Government Rights

It is understood and agreed that this license does not preclude the Government from asserting rights under the provisions of said contract or of any other agreement between the Government and the Contractor, or any other rights of the Government with respect to the above-identified invention.

Signed this 7th day of April, 2000

(SEAL)

Arthur D. Little (Contractor)

By: Jennifer M. Taggart, Associate General Counsel *Jennifer M. Taggart*

Acorn Park 25 Acorn Park
(Business Address)

Cambridge, MA 02140 _____