

STATEMENT OF CONSIDERATIONS

REQUEST BY UNITED TECHNOLOGIES CORPORATION (UNITED TECHNOLOGIES) FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN RIGHTS TO INVENTIONS MADE UNDER COOPERATIVE AGREEMENT NUMBER DE-FC04-02AL67610, DOE WAIVER NO. W(A) 02-026.

The Petitioner, United Technologies, acting through the United Technologies Research Center (UTRC), has requested a waiver of all domestic and foreign patent rights to inventions that may be conceived or first actually reduced to practice in the course of UTRC's work as the prime contractor under Cooperative Agreement Number DE-FC04-02AL67610 entitled "High Density Hydrogen Storage System Demonstration Using NaAlH₄ Based Complex Compound Hydrides" with the U.S. Department of Energy (DOE).

The work to be done will be the design, development and evaluation of a hydrogen storage medium and system based on NaAlH₄ with a 5 kg hydrogen storage capacity and with installation capability in a fuel cell used to power a mid-size sedan. The goal is produce a hydrogen storage medium with high-volume capacity and a wide range of operation temperatures. The hydrogen storage system will be designed to have a refueling time of less than five minutes and have a final manufacturing cost of approximately \$167 per unit, presuming one-half million units are to be manufactured. Enhancements to the NaAlH₄ medium will be an important research item under the cooperative agreement. This research and development will lead to broader use of fuel cell technologies, which will result in better air quality and lowered dependence on unstable overseas oil supplies.

The cooperative agreement covers a period from May 1, 2002 through April 30, 2006 at a total cost to DOE of \$1,800,000. DOE funds to be provided as follows: FY02 -- \$545,000; FY03 -- \$660,000; FY04 -- \$445,000; FY05 -- \$150,000. United Technologies, through UTRC, will provide \$705,798 as a cost share (28.2%) over the life of this agreement. The government contribution will be made through Budget & Reporting Code EE0502 sponsored by the Office of Advanced Automotive Technologies. UTRC has expended approximately \$800,000 in calendar year 2002 alone on NaAlH₄ media development.


United Technologies is a U.S.-based, multinational corporation with research, marketing and production experience in a wide range of technical areas, including high performance, low-emission fuel cells for aerospace, military and commercial applications. UTRC is a wholly owned subsidiary of United Technologies and operates as the central research and development center supporting all of United Technologies' research and development efforts. United Technologies has been active in fuel cell development since 1958. United Technologies, through its subsidiary United Technologies Corporation Fuel Cells (UTCFC), designed and manufactures the world's only commercially available fuel cell power system. UTCFC itself invests more than

\$100M annually to the development of new fuel cell and fuel reformation technologies. UTRC is a global leader in the development of all varieties of advanced fuel cell technologies. Based on United Technologies global marketing base, the grant of this waiver will allow for swift, thorough and worldwide commercialization and implementation of any improved fuel cell technology that may be developed under this cooperative agreement. Based on the dynamic nature of the technology itself, as well as the research and development being done in this field worldwide, it is not foreseen that the grant of this waiver would decrease competition, cause undesirable market concentration, nor place United Technologies in a dominant market position.

United Technologies has agreed to abide by 35 U.S.C. §§ 202, 203 and 204, as well as the provisions of the Standard Patent Rights clause for an Advance Waiver. Additionally, United Technologies has agreed to the provisions of the attached U.S. Competitiveness Clause, which requires Petitioner to substantially manufacture any products embodying or produced through any waived invention in the United States, unless Petitioner can convince DOE it is not commercially feasible to do so. Petitioner agrees to make this condition binding on any assignee or licensee. United Technologies will abide by the Export Control laws and will require its licensees, if any, to do the same. United Technologies will expend such sums as may be required to maintain the necessary patent protection and provide incentive for commercial development of the invention. Additionally, Petitioner has affirmatively agreed to the background data rights clause found in 48 CFR 952.227-14, Alternate VI (February 1998) (attached).

Considering Petitioner's status as a world leader in the development, production and commercialization of fuel cell technology, it is concluded that the grant of the requested waiver is most likely to achieve commercialization success and actual implementation of this fuel cell, hydrogen storage technology on both a national and global scale.

As such, upon evaluation of the Waiver Petition in view of the objectives and considerations set forth in 10 CFR 784.4, all of which have been considered, it is recommended that the requested waiver be granted.



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Based on the foregoing Statement of Considerations and the representations of the attached Waiver Petition, it is determined that the interests of the United States and the general public will best be served by a waiver of patent rights of the scope described above and, therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the cooperative agreement where, through such modification or extension, the purpose, scope or DOE cost of the cooperative agreement have been substantially altered.

CONCURRENCE:



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Date: 2/20/03

APPROVAL:



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Date: 3-11-03

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