## STATEMENT OF CONSIDERATIONS

### REQUEST BY UNITED TECHNOLOGIES CORPORATION FOR AN ADVANCE WAIVER OF PATENT RIGHTS TO INVENTIONS MADE UNDER COOPERATIVE AGREEMENT NO. DE-FC26-07NT43055; W(A)-07-015, CH-1400

As set out in the attached waiver petition and in subsequent discussions with DOE Patent Counsel, United Technologies Corporation (UTC) has requested an advance waiver of domestic and foreign patent rights for all subject inventions made under the above subject cooperative agreement. The waiver will apply to inventions made by UTC employees and its subcontractors' employees, regardless of tier, except inventions made by subcontractors eligible to retain title to inventions pursuant to P.L. 96-517, as amended, and National Laboratories. An e-mail message from UTC is attached explaining that the subcontractors Power+Energy and Metal Hydride Technologies are small businesses and therefore eligible to retain title to their own subject inventions.

Referring to item 3 of UTC's petition, the purpose of this agreement is to fabricate and evaluate subscale tubular advanced palladium (Pd) alloy membrane separators for the central production of high purity hydrogen. The membrane composition will be based upon the results of UTC's current DOE contract DE-FC26-05NT42435 (for which Advance Waiver W(A)-05-037 was granted February 10, 2006) that uses advanced atomistic and thermodynamic modeling to design ternary alloys of Pd, copper (Cu), and transition metal (TM) that are markedly superior to current PdCu separators due to their superior poison tolerance, high permeance, excellent thermal stability and cost effectiveness.

The work under this agreement is expected to take place from March 1, 2007 through February 29, 2009 at a total cost of $1,497,377. UTC will be obligated to cost share $299,490, or 20 percent of the total cost of the project. DOE is providing the remaining 80% or $1,197,887.

In view of the cost sharing and other equities between UTC and its subcontractors, it is anticipated that the parties will develop an appropriate allocation of patent rights among the participants to facilitate the expeditious development of the technology forming the subject matter of the agreement. Accordingly, DOE will waive title to all subject inventions made by UTC's employees and its subcontractors' employees, regardless of tier, except inventions made by subcontractors eligible to retain title pursuant to P.L. 96-517, as amended, or National Laboratories, to UTC or its subcontractors, as mutually agreed by the parties. Except as otherwise approved in writing by DOE Patent Counsel, a party's acceptance of a subcontract under this agreement, at any tier, shall constitute UTC's certification that it has provided that party with a copy of this Statement of Considerations and that party's notice to DOE that it accepts the terms and conditions of this advance waiver. Additionally, subcontractors who receive title under this waiver shall notify DOE Patent Counsel in writing of such disposition of patent rights.

Referring items 5-9 in UTC's waiver petition, UTC is the world leader in fuel cell production and development for commercial, transportation, residential and space applications. Patents and publications relevant to UTC's SOFC technology are cited in response to question 5. This, coupled with UTC's cost sharing, clearly demonstrates the likelihood that UTC will continue development and commercialization of the results of this agreement.

Referring to item 11 of the waiver petition, granting this waiver is not anticipated to have any adverse impact on competition. The advanced water-gas shift membrane reactor based on the membrane testing from this project is envisioned as a lower cost system for converting cleaned coal gas to Fuel Cell purity hydrogen. Such a membrane is a technological enabler,

required for the future hydrogen economy. UTC has a substantial existing patent portfolio such that any new inventions are not likely to change the existing market situation, and Intellectual Property developed under the program will enable the petitioner to bring to commercialization hydrogen production systems, allowing for technological competition in the market place.

This advance waiver of the Government's rights in inventions is subject to the usual advance patent waiver licensing provisions, and the government license, march-in rights, and preference for U.S. industry provisions set out in 35 U.S.C. 202-204. The advance patent waiver also includes the attached U.S. Competitiveness clause (paragraph t) which requires products embodying any waived invention or produced through the use of any waived invention be manufactured substantially in the United States unless the participant can show to the satisfaction of DOE that it is not commercially feasible to do so. The contractor further agrees to make the above condition binding on any assignee, licensee or other entity acquiring rights to any waived invention, including subsequent assignees or licensees. Should the Contractor or other such entity receiving rights in any waived invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by DOE.

Considering the foregoing, it is believed that granting this waiver will provide Petitioner with the necessary incentive to invest its resources in the commercialization of the results of the agreement in a fashion which will make the technology available to the public in the shortest practicable time. Therefore, upon evaluation of the waiver petition and in view of the objectives and considerations set forth in 10 CFR Part 784, all of which have been considered, it is recommended that the requested waiver be granted.

[redacted]

Mark P. Dvorscak
Deputy Chief Counsel
Intellectual Property Law Division

Date_____

Based upon the foregoing Statement of Considerations and representations in 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 will not apply to any modification or extension of the cooperative agreement, where through such modification or extension, the purpose, scope or cost of the cooperative agreement has been substantially altered.

CONCURRENCE:

[redacted]

Sam Biondo
Director, Office of Clean Energy Systems
Office of Fossil Energy, FE-22

Date 2-21-08

APPROVAL:

[redacted]

Paul A. Gottlieb
Assistant General Counsel for
Technology Transfer and Intellectual
Property, GC-62

Date 2-26-08

(t) 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 the 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 other such entity receiving rights in the invention undergo a change in ownership amounting to a controlling interest, then the waiver, assignment, license, or other transfer of rights in the waived invention is suspended until approved in writing by the DOE.