

STATEMENT OF CONSIDERATIONS

REQUEST BY UNITED TECHNOLOGIES RESEARCH CENTER FOR AN ADVANCE WAIVER OF THE GOVERNMENT'S DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE COOPERATIVE AGREEMENT DE-EE0003955; DOE WAIVER NO. W(A)2011-014; CH1598

The Petitioner, United Technologies Research Center (UTRC), has requested an Advance Waiver of the Government's domestic and foreign rights to inventions in the above cited research and development cooperative agreement issued by DOE's National Energy Technology Laboratory (NETL). See attached UTRC's Petition, Answer 1.

Subject of the R&D Contract

Title: Natural Refrigerant Very High Efficiency HVAC Systems

The objective of the cooperative agreement is to design, develop and demonstrate a safe low Global Warming Potential (GWP) Very High Performance Air-Conditioning (VHPAC) residential system. The 4 stage project will include design, analysis, fabrication and commissioning of a component test rigs to facilitate proof-of-concept testing of proposed technologies. It is hoped that the outcome will achieve a net 4% reduction in overall annual energy consumption of residential buildings. See Petition Answer 2 for more details of this project.

UTRC Expertise in the Field

UTRC delivers the advanced technologies, innovative thinking and disciplined research to the businesses of United Technologies Corporation (UTC), which include heating and air conditioning (Carrier) and power generation (UTC Power). UTRC works directly with the UTC business units and outside partners to develop technology solutions that transition into product development. UTRC has developed component and system level modeling tools for design and optimization of heat exchangers, work recovery devices, power electronics, dynamic system modeling and controls, complex fluid systems, building optimization and multi-physics simulations. UTRC has at least 6 patent applications on work recover devices and 3 patents on compact heat exchangers. See Petition Answer 5.

Carrier is a world leader in design and manufacture of HVAC (Heating, Venting & Air Conditioning) systems and its components. The project will examine air-conditioning components to improve their respective efficiencies. See Petition Answer 6.

The Allocation of Patent Rights

UTRC has requested the worldwide rights in all inventions developed under this cooperative agreement. The total budget for the 32 month project is \$2,497,921 where UTC is providing \$499,584 as their cost share equal to 20%. See Appendix, Petition Answer 3. In addition, UTRC directly receives approximately \$50M annually from UTC for new technology and tools

with approximately 15% assigned to improve efficiency of Carrier products. UTC has invested \$5M in prior research & development for advance cycles and refrigerants related for HVACR (HVAC & Refrigeration) products. See Petition Answer 7-9.

The residential market has a growing need for energy efficiency and environmentally friendly technologies. The proposed natural refrigerant-based VHPAC system will have a major impact on reducing annual energy consumption of the US residential air-conditioning systems. Once commercialized for residential market, the proposed advance technology and components will likely proliferate to US commercial buildings and transport refrigeration markets. Owning the intellectual property will enable UTC to become a more significant participant in the HVACR equipment market, increasing the competition among such products. See Petition Answer 10.

Due to UTC's success in this field, it is important for it to own, maintain and commercialize any inventions under this cooperative agreement. This will assist in advancing the US market and economy since UTC is a US company with manufacturing facilities in the United States. The patent rights waiver is subject to the retained government-use license, march-in rights, reporting requirements, 35 U.S.C. 204, and following DOE's standard U.S. Competitiveness provision:

U.S. Competitiveness

The waiver recipient 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 waiver recipient can show to the satisfaction of DOE that it is not commercially feasible to do so. The waiver recipient further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees.

Conclusion

UTRC was selected as the most qualified U.S. company capable of performing the tasks under this cooperative agreement. The technology being developed in the cooperative agreement is closely aligned with UTC's business and extensive research in this field. Therefore, the Government believes that the inventions created under this cooperative agreement should be owned by UTRC for commercialization by its parent company UTC and its subsidiaries as being best to commercialize the technology and advance their products in this field.

For the foregoing reasons, and in view of the objectives and considerations set forth in 10 CFR 784, all of which have been considered, it is recommended that the requested waiver be granted.



Date: 1/28/2011

Gary Drew
Assistant Chief Counsel for Intellectual Property
DOE Chicago Office

Based on the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by waiver of the United States' domestic and foreign patent right as set forth herein, and therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the UTRC cooperative agreement where, through such modification or extension, the purpose, scope or DOE cost of the cooperative agreement has been substantially altered. This waiver shall not affect any waiver previously granted.

CONCURRENCE:



Date: 7/15/11

Roland Rissér
Program Manager
Office of Building Technologies Program

APPROVED:



Date: 7/19/2011

John Lucas
Assistant General Counsel
for Technology Transfer and Intellectual Property