

STATEMENT OF CONSIDERATIONS

PETITION FOR ADVANCE WAIVER OF PATENT RIGHTS BY PRAXAIR INC. ("PRAXAIR") UNDER AGREEMENT NO. DE-FG36-08GO18063 BETWEEN PRAXAIR AND DOE; W(A)-2010-19; CH-1551

The Petitioner, PRAXAIR, has requested a waiver of domestic and certain foreign patent rights for all subject inventions that may be conceived or first actually reduced to practice by PRAXAIR arising from its participation under the above referenced agreement entitled "Advanced Hydrogen Liquefaction Process."

The objective of the project is to reduce the cost of liquefying hydrogen by improving efficiency and reducing capital cost to the extent that the new process design meets or exceeds the DOE Hydrogen Fuel Cells and Infrastructure Technologies (HFCIT) Program Year 2012 goals of 75% efficiency and 20% capital cost reduction. The program will attempt to accomplish this by using improved process equipment, improving the design of the entire liquefaction process, and improving management of the ortho-para conversion process. Other program goals include providing a path by which DOE HFCIT Year 2017 goals of 85% efficiency and 40% capital cost reduction could be realized. The main tasks in the program are to design and model a new process for hydrogen liquefaction using state-of-the-art process equipment and an improved ortho-para conversion to maximize process efficiency and reduce capital cost.

The total cost of the project is approximately \$1.6 million with the Petitioner providing about 20% cost sharing. This waiver is contingent upon the Petitioner maintaining, in aggregate, the above cost sharing percentages over the course of the agreement.

As noted in its waiver petition, Petitioner is one of the world leaders in hydrogen supply and has been a pioneer in the development of hydrogen production, purification, and distribution technologies. Praxair and its predecessor developed the first PSA for hydrogen purification and Praxair was the first industrial gas company to design and build a line of small standardized plants for on-site hydrogen production. Praxair continues to invest millions of dollars on hydrogen production and purification systems.

Considering Petitioner's technical expertise and significant investment in this technology including sizable cost sharing in this agreement, it is reasonable to conclude that Petitioner will continue to develop and ultimately commercialize the technology and products which may arise from this agreement.

Petitioner has agreed that this waiver shall be subject to the march-in and preference for U.S. industry provisions, as well as the U.S. Government license, comparable to those set out in 35 U.S.C. 202-204. Further, Petitioner has agreed to the attached U.S. Competitiveness provision paragraph (t). In brief, Petitioner has agreed that products embodying a waived invention or produced through the use of a waived invention will be manufactured substantially in the United States unless the Petitioner can show to the satisfaction of the DOE that is not commercially feasible to do so.

Referring to item 10 of the waiver petition, granting this waiver is not anticipated to have any adverse impact on competition. There are several companies developing advanced hydrogen production systems including major industrial gas suppliers like Air Products and Chemicals, Air Liquide (France) and Linde AG (Germany). If anything, the technology forming the subject matter of the project will stimulate competition by lowering the cost of hydrogen and help Praxair to compete with its foreign competitors.

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 above 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 784, all of which have been considered, it is recommended that the requested waiver be granted.

/Brian J. Lally/
Brian J. Lally
Assistant Chief Counsel
Intellectual Property Law Division
DOE Chicago Office

Date: March 17, 2010

WAIVER ACTION - ABSTRACT
W(A)-10-019

<u>REQUESTOR</u>	<u>CONTRACT SCOPE</u>	<u>RATIONALE FOR DECISION</u>
PRAXAIR	The objective of the project is to reduce the cost of liquefying hydrogen by improving efficiency and reducing capital cost to the extent that the new process design meets or exceeds the DOE Hydrogen Fuel Cells and Infrastructure Technologies (HFCIT) Program Year 2012 goals of 75% efficiency and 20% capital cost reduction.	20% Cost Sharing

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 shall not apply to any modification or extension of the agreement, where through such modification or extension, the purpose, scope or cost of the agreement has been substantially altered.

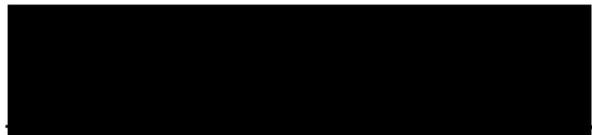
CONCURRENCE:



Richard Farmer
Acting Program Manager
Office of Fuel Cell
Technologies Program, EE-2H

Date: 5-6-2010

APPROVAL:



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

Date: 5/6/10

(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., recoument 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.