

STATEMENT OF CONSIDERATIONS

REQUEST BY PRAXAIR, INC. FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN PATENT RIGHTS UNDER DOE COOPERATIVE AGREEMENT NO. DE-FC07-95ID13331; W(A)-95-020; CH-0865

The Petitioner, Praxair, Inc. has requested a waiver of domestic and foreign patent rights for all subject inventions arising from its participation under the above referenced cooperative agreement entitled "Dilute Oxygen Combustion System."

The objective of the cooperative agreement is to develop and demonstrate, on a commercial scale, an extremely low NO_x emission combustion technology by conducting combustion in an oxidant stream with low oxygen and nitrogen concentrations. Such low concentrations are made possible by utilizing separate high velocity fuel and oxygen jets such that the oxidant stream undergoes maximum dilution before being combined with the fuel jet. The work includes bench scale measurements to determine operating limits and optimum jet configuration; techno-economic and market assessment; computational fluids dynamic modeling for scale up; pilot scale tests; host site acquisition; and full scale demonstration in a commercial furnace. The agreement includes three phases representing laboratory, pilot and commercial scale testing.

The total anticipated cost of the cooperative agreement, over the course of its three phases, is \$1.5 million, with the Petitioner's share being \$465,165 for approximately 31% cost sharing. The cost sharing for the first two research and development phases, Phases I and II, will be at 20%, while for the final demonstration phase, Phase III, it will be at 50%. The current approved budget for Phase I is \$535,574 with the Petitioner's share being \$107,102 for approximately 20% cost sharing. The continuation of the waiver is contingent upon the Petitioner maintaining the above cost sharing percentages over the entire course of the agreement.

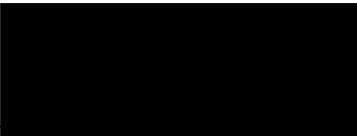
As noted in its waiver petition, Petitioner is the largest domestic oxygen producer and a technical leader in applied combustion technology, having successfully developed and commercialized a variety of industrial furnaces. Petitioner's non-governmental commercial position in the above technology is significant, with its market share estimated to be around 25-30% of the U.S. oxygen-fuel combustion systems and associated oxygen supply systems. Petitioner is actively engaged in developing and bringing new oxygen applications to the market. Since 1977, Petitioner estimates that it has expended up to \$21 million on research and development of combustion application technology. Considering Petitioner's technical expertise, established market position, and significant investment in this technology including sizable cost sharing in this cooperative agreement, it is reasonable to conclude that Petitioner will continue to develop and ultimately commercialize the technology, as well as products, which may arise from this cooperative 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 U.S. competitiveness provisions as attached to this Statement. In brief, Petitioner has agreed that products embodying any waived

invention or produced through the use of any waived invention will be manufactured substantially in the United States unless Petitioner can show to the satisfaction of the DOE that it is not commercially feasible to do so. Further, Petitioner has agreed that it will not license, assign or otherwise transfer any waived invention to any entity unless that entity agrees to these same requirements.

Referring to item 10 of the waiver petition, granting this waiver is not anticipated to have any adverse impact on competition. There are currently numerous national as well as regional competitors in the oxygen and combustion technology field. Because of this significant competition, the success of this cooperative agreement can be expected to stimulate further investment by competitors, not only in this technology, but in other comparable competing technologies as well.

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 cooperative 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 41 CFR 9-9.109-6, all of which have been considered, it is recommended that the requested waiver be granted.



Robert J. Fisher
Acting Deputy Chief Counsel
Intellectual Property Law
Division

Date: 5-19-95



Daniel D. Park
Patent Attorney
Intellectual Property Law
Division

Date: 5/19/95

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 cooperative agreement, where through such modification or extension, the purpose, scope or cost of the cooperative agreement has been substantially altered.

CONCURRENCE:



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EE-221/FORS

Date: 10/2/95

APPROVAL:



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Assistant Chief Counsel
for Technology Transfer and
Intellectual Property, HQ
GC-62/FORS

Date: 10-5-95

(c) (3) (ix) 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 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.

WAIVER ACTION - ABSTRACT

W(A)-95-020; CH-0865

REQUESTER

CONTRACT SCOPE OF WORK

RATIONAL FOR DECISION

DISPOSITION

Praxair, Inc.

Development of dilute oxygen
combustion systems

31% cost sharing

Recommended