STATEMENT OF CONSIDERATIONS

Request by Environ International Corporation for an Advance Waiver of Domestic and Foreign Invention Rights under DOE Cooperative Agreement No. DE-EE0000069; W(A)-09-069, CH-1539

The Participants in this project, Environ International Corporation (Environ) as prime, along with Shell Global Solutions (US) Inc. (Shell) and Callidus Technologies, Inc (Callidus), are requesting the right to elect title to their respective employee subject inventions made under the subject cooperative agreement, entitled, "Fuel-Flexible Combustion System for Refinery and Chemical Plant Process Heaters". The purpose of the cooperative agreement is to develop and to demonstrate a full-scale fuel handling and combustion system, which will allow a broad range of opportunity gas fuels, including renewable gas fuels, to be safely, cost-effectively and efficiently utilized while generating minimal emissions of criteria pollutants. The focus of the project will be on the refining and chemicals sector: together these two sectors account for approximately 2300 TBtu/vr of natural gas consumption in the U.S.A.--- more than 40% of total industrial natural gas use. Development and deployment of systems, which can allow the use of a broad range of opportunity fuels, which will lead to lower greenhouse gas emissions associated with refinery and chemical plant operations, as well as to economic benefit for plant operators. The waiver is to apply to Environ and its subcontractor's employee subject inventions, except inventions made by subcontractors eligible to retain title to inventions pursuant to P.L. 96-517 as amended, as explained in the petition and in an attached e-mail message. Currently Shell and Callidus are the only large business subcontractors under this cooperative agreement.

The total estimated cost of the cooperative agreement is \$2,775,355. The participants are cost sharing at least 30% in budget periods 1 and 2, with DOE providing the remaining 70%. For budget period 3, Environ is providing 2%, Callidus is providing 1%, and Shell is providing 47% so that DOE will provide the remaining 50% total cost share. A detailed breakdown cost sharing is shown in the attached e-mail from Environ. The period of performance of the agreement is from August 25, 2009 to February 28, 2011.

In its response to question 5 of the attached waiver petition, the participants have described their respective technical competencies in the field of fuel refining and chemical engineering. Environ states that it is an environmental and engineering consulting firm with record combustion technology development over the last twenty years, including several developments in the refining and chemicals sectors. It has attached four relevant patents it has obtained in this technical field. Shell states that it owns and operates 6 refineries and 5 chemical plants in the U.S. and that it has an extensive network of engineering specialists in the field of combustion, heater design and operation, mechanical engineering and materials that will be useful in this project. Callidus states that it is a leading manufacturer of combustion systems for use in refinery and chemical plant process equipment, as well as flares, incinerators and other technologies. It sells the market-leading CUB line of ultra low emissions burners for process heaters that was developed under a previous DOE program. The participant's technological experience in fuel refining and chemical engineering demonstrate their technical competency.

From the response to question 10, it is unlikely that grant of the waiver will place the participants in a preferred market position. Shell expects that it will license the right to use the new technology developed under this program and that other petroleum companies will apply the technology in their affiliated plants. Thus, this new technology will benefit a wide range of companies and speed commercialization. In addition to Callidus, there are two other major process heater burner companies in the U.S. with active R&D efforts resulting in a competitive market. It is unlikely that competition will be adversely affected by grant of the waiver.

The subject cooperative agreement will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which the participants have agreed to substantial U.S. manufacture of subject inventions (attached hereto). Additionally, the participants have agreed not to transfer subject inventions to any other entity unless that other entity agrees to these same requirements.

In view of the cost sharing and other equities among the participants, 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 the participants' 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 the participants 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 a participant'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. Furthermore, a subcontractor has the right to request a waiver from DOE in its own right, rather than having to pass through the contractor to acquire title to subject inventions. Additionally, subcontractors who receive title under this waiver shall notify DOE Patent Counsel in writing of such disposition of patent rights.

Considering the foregoing, it is believed that granting the waiver will provide the Petitioner with the necessary incentive to invest resources in the commercialization of the results of the agreement in a fashion which will make the agreement's benefits available to the public in the shortest practicable time. In addition, it would appear that grant of the above requested waiver would neither result in an adverse effect on competition nor result in excessive market concentration. Therefore, 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, as set forth above, be granted.

Mark P. Dvorscak Deputy Chief Counsel Office of Intellectual Property Law

Date 4 23 2010

Based on the foregoing Statement of Considerations and the representations in the attached waiver petition, it is determined that the United States and the general public will best be served by a waiver of rights and consent to assignment of the scope described above, and therefore the waiver is granted. This waiver shall not apply to any modification or extension of this agreement, where through such modification or extension, the purpose, scope, or cost of the agreement is substantially altered.

CONCURRENCE:

Douglas Kalempf Industrial Technologies Program Manager Office of the Industrial Technologies Program EE-2FG

Date 5/12/10

APPROVAL:

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

Date 5/18/2010

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(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.