STATEMENT OF CONSIDERATIONS

REQUEST BY H2GEN INNOVATIONS, INC. (H2GEN) FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN RIGHTS TO INVENTIONS MADE UNDER COOPERATIVE AGREEMENT NUMBER DE-FC04-02AL67613, DOE WAIVER NO. W(A) 02-021.

The Petitioner, H2Gen, a subcontractor to Air Products & Chemicals, Inc. (Air Products), has requested a waiver of all domestic and foreign patent rights to inventions that H2Gen may conceive or first reduce to practice in the course of H2Gen's work as a subcontractor under Cooperative Agreement Number DE-FC04-02AL67613 entitled "Development of a Turnkey Commercial Hydrogen Fueling Station" with the U.S. Department of Energy (DOE). H2Gen had originally requested rights in any trade secrets it may have conceived under the subcontract—this request for rights in trade secrets has been subsequently withdrawn pursuant to H2Gen's May 16, 2002 signed letter (attached).

The work to be done will be the development of a low-cost reformer system capable of economically converting natural gas into 99.95+% pure hydrogen for use in a broad range of fuel cells. Such a system would be vital to the commercialization and viability of hydrogen fuel cell energy sources and hydrogen fuel cell vehicles. The research and work to be performed under this Cooperative Agreement will not adversely impact public health, safety or welfare—on the contrary, the results of this research should lead to a substantial health benefit since hydrogen fuel cell sources have zero emissions of pollutants such as carbon dioxide, sulfur dioxide, and particulates. Better air quality and lowered dependence on unstable overseas oil sources would be the intended impact of this research.

The cooperative agreement covers a period from January 1, 2002 through December 31, 2004 at a total cost to DOE of $4,580,000. The money to be provided as follows: FY02 -- $1,088,000; and FY03 -- $3,492,000. H2Gen's own cost share to this work during the contract period will be at least $641,128, with additional venture capital investment pending. The primer contractor, Air Products, will provide an additional, estimated $4,580,000 cost share over the life of this agreement. Air Products has submitted their own advance waiver for rights to their own inventions under this cooperative agreement—known as W(A) 02-017. The government contribution will be made through three separate Budget & Reporting Codes EB4200, EE0602 and EE0502 sponsored by the Office of Advanced Automotive Technologies.

H2Gen and its parent company, Directed Technologies, Inc., has had a continuing research and development effort in the field of hydrogen and fuel cell technology for over nine years. H2Gen has strong expertise in this field of technology and will continue to aggressively research and invest in the fields of hydrogen reformer and gas purification systems. Furthermore, H2Gen has committed to raising between $6 - $8 million in additional venture capital to invest in the development and commercialization of this hydrogen reformer technology.

H2Gen was incorporated from its parent company exclusively to develop and market commercial hydrogen generation systems. The grant of this waiver will allow for swift and thorough commercialization and implementation of hydrogen reformer systems as well as the utilization of fuel cell technologies at a consumer level.

While other natural gas conversion technologies exist, the hydrogen reformer technology being developed by the Petitioner is unique in the world. This is a very dynamic, growing and competitive field. It is not foreseen that the grant of this waiver would decrease competition, cause undesirable market concentration, nor place H2Gen in a dominant market position. The granting of this waiver could allow H2Gen to take the lead over foreign competition in this highly competitive market—a lead that would only be maintained through further development and aggressive commercial efforts.

H2Gen has agreed to abide by 35 U.S.C. §§ 202, 203 and 204, as well as the provisions of the Standard Patent Rights clause for an Advance Waiver. Additionally, H2Gen (a U.S. company) has agreed to the provisions of the attached U.S. Competitiveness Clause, which requires H2Gen to substantially manufacture any products embodying or produced through any waived invention in the United States, unless H2Gen can convince DOE it is not commercially feasible to do so. H2Gen agrees to make this condition binding on any assignee or licensee. H2Gen will abide by the Export Control laws and will require its licensees, if any, to do the same. H2Gen will expend such sums as may be required to maintain the necessary patent protection and provide incentive for commercial development of the invention.

Considering this is a new technology, Petitioner's unique expertise in this field, as well as Petitioner's prior research and on-going contributions to the field of hydrogen reformer technology, it is concluded that the grant of the requested waiver is most likely to achieve commercialization success and actual implementation on a national and potential global scale in the shortest possible time.

As such, upon evaluation of the Waiver Petition in view of the objectives and considerations set forth in 10 CFR 784.4, all of which have been considered, it is recommended that the requested waiver be granted.

[redacted]

Jim C. Durkis
Patent Attorney
DOE, Albuquerque Operations Office

Based on the foregoing Statement of Considerations and the representations of 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 a modification or extension of the subcontract where, through such modification or extension, the purpose, scope or DOE cost of the subcontract has been substantially altered.

CONCURRENCE:

[redacted]

Robert Kirk
Director, Office of Advanced
Automotive Technologies (EE-32)

Date: 11/5/02

APPROVAL:

[redacted]

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

Date: 11-6-02

DOE Headquarters Project Manager: Peter R. Devlin