

## STATEMENT OF CONSIDERATIONS

### **Request by General Electric Company for an Advance Waiver of Domestic and Foreign Invention Rights under DOE Contract No. DE-FC26-05NT42451 W(A)-05-043, CH-1326**

The Petitioner, General Electric Company (GE) was awarded a cooperative agreement for the performance of work entitled, "Integrated High Temperature Coal-to-H<sub>2</sub> System with CO<sub>2</sub> Separation. The purpose of the cooperative agreement is to develop a detailed design for a single module for hot gas cleanup and production of pure hydrogen from coal-derived syngas. Development of high-temperature membrane materials is at the core of the design. The simplified "one-box" process will combine shift reactors with a high temperature CO<sub>2</sub>-selective membrane to convert CO to CO<sub>2</sub>, remove sulfur compounds, and remove CO<sub>2</sub> in a compact, fully integrated system, producing high purity hydrogen. This waiver is only for inventions of GE made under its subcontract.

The total estimated cost of the contract is \$646,546 with the DOE share being \$517,237 or 80%. The remaining cost-share of \$129,309 or 20% will be provided by GE. The period of performance is from June 1, 2005 through May 31, 2007.

In its response to questions 5 and 6 of the attached waiver petition, GE has described its technical competence in the field of coal-to-H<sub>2</sub> systems and porous nanoceramic membranes for over 5 years and has numerous patents and publications, a representative listing of which are attached as Appendixes A and B to the waiver petition. GE states that the work covered by this contract is applicable to GE's Integrated Gasification Combined Cycle (IGCC) systems, which was pioneered by GE almost 30 years ago. GE's response demonstrates its technical competency in the field of systems for coal-to-H<sub>2</sub> and porous nanoceramic membranes.

In its response to question 10 of the attached waiver petition, GE states that the broad market for IGCC technologies is highly competitive. With respect to the more specific market for coal-to-H<sub>2</sub> cleanup technologies, there are several competing technologies under development including pressure swing adsorption. Selexol absorption, and low temperature membranes, which would not appear to be adversely impacted by issuance of a waiver. Therefore grant of the waiver will have a positive effect on competition and market concentration.

The subject contract will be modified to add the Patent Rights--Waiver clause in conformance with 10 CFR 784.12, wherein GE has agreed to the provisions of 35 U.S.C §§ 202, 203, and 204. This waiver clause will also include a paragraph entitled U.S. Competitiveness, in which GE agrees to substantial U.S. manufacture of subject inventions (attached hereto). Additionally, GE agrees not to transfer subject inventions to any other entity unless that other entity agrees to these same requirements.

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 not 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.

[REDACTED]  
Mark P. Dvorscak  
Assistant Chief Counsel  
Intellectual Property Law Division

Date Sept 30, 2005

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 of the scope described, 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:

[REDACTED]

Edward Schmetz  
Office of Sequestration, Hydrogen  
and Clean Coal Fuels, Office of  
Fossil Energy, FE-24

APPROVAL:

[REDACTED]

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

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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.

## ***WAIVER ACTION - ABSTRACT***

**W(A)-05-043 (CH-1326)**

### REQUESTOR

General Electric Company  
under DOE Contract No.  
DE-FC26-05NT42451

### CONTRACT SCOPE OF WORK

Integrated High Temperature  
Coal-to-H<sub>2</sub> System with CO<sub>2</sub> Separation

### RATIONALE FOR DECISION

20% cost sharing

### DISPOSITION