STATEMENT OF CONSIDERATIONS

REQUEST BY GENERAL ELECTRIC COMPANY-CORPORATE RESEARCH AND DEVELOPMENT, FOR AN ADVANCE WAIVER OF DOMESTIC AND FOREIGN INVENTION RIGHTS UNDER ITS SUBCONTRACT WITH EG&G IDAHO, INC., NO. EGG-C92-120319, UNDER CONTRACT NO. DE-AC07-76ID01570 - W(A)-93-012 CH-0762

Under this subcontract with EG&G Idaho, Inc. (EG&G), General Electric Company - Corporate Research and Development (GE-CRD) is to assess the design of the power electronics and control for an advanced electric vehicle driveline that utilizes ultracapacitors for load leveling the main storage battery and decouples the maximum capacitor, nominal battery pack, and driveline system voltages, and to compare the weight, volume, cost, and performance of such systems with that of the MEVP AC driveline.

The study will evaluate on paper the design possibilities for the advanced driveline and to assess the use of advanced concepts in power electronics, producing an output of preliminary circuit diagrams of the various electronic systems, and descriptions of control strategies for transient operation in electric vehicles.

The total estimated cost of this subcontract is $89,874. GE-CRD's cost share is $17,369, or 20% of the total cost. The period of performance of the subcontract is September 21, 1992 through February 28, 1993.

GE-CRD is technically competent with respect to electric drives and propulsion systems for electric vehicle and industrial drives. It is the owner of U.S. Patent No. 4,926,104 entitled "Adjustable Speed AC Drive System Control for Operation in Pulse Width Modulation and Quasi-Square Wave Modes", which relates to controls for AC electric motor drives. GE-CRD has published and distributed numerous technical papers in this area of technology at various international symposia. Copies of the patent and these papers are attached. As brought out in response to question 6, GE-CRD has been engaged in electric vehicle research sponsored by the U.S. DOE over the last 15 years, most recently cost sharing approximately $1,300,000 for the last three programs, including the GE Drive Systems program and the MEVP program. In addition to cost share, GE-CRD has had a continuous investment through a dedicated engineering group and advanced dynamometer and test facilities reserved for electric vehicle research and development.

Referring to GE-CRD's response to questions 9 and 10, granting the waiver will enable GE-CRD to make further investment in the areas of ultracapacitor interface electronics and associated control plus basic research in ultracapacitors. Although developments under this subcontract are not expected to result in a complete product, GE plans to make information obtained from this study available to other researchers in the field by means of technical papers, presentations, and other means to accelerate worldwide progress towards a viable and affordable electric vehicle. In addition, GE is

also uniquely positioned to transfer the subject technology to the market place, being in both the transportation and drive systems markets. The coupling of GE-CRD's existing technology with ultracapacitors offers opportunities for new product lines in General Electric businesses which serve the electric utility market.

GE-CRD has agreed to standard provisions with respect to invention waivers with the substitution of the march-in rights, U.S. manufacturing preference, and U.S. government license provided in 35 U.S.C. 203. Additionally, GE-CRD has indicated acceptability of the background patent and data provisions of paragraphs k, h and j. GE-CRD has agreed to the provisions of the attached U.S. Competitiveness clause.

Considering the foregoing, it is believed that granting the waiver will provide GE-CRD with the necessary incentive to invest its 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. Therefore, in view of the objectives and considerations set forth in DOE PR 9-9.109-6, all of which have been considered, it is recommended that the requested waiver, as set forth above, be granted.

[redacted]

Mark P. Dvorscak
Patent Attorney
Office of Intellectual Property Counsel

Date: March 15 1993

Based on the foregoing Statement of Considerations and the 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 is substantially altered.

CONCURRENCE:

[redacted]

Kenneth Heitner
Electric/Hybrid Propulsion
Division, Transportation
Technologies

Date: 3/25/93

APPROVAL:

[redacted]

Richard E. Constant, Assistant
General Counsel for
Intellectual Property

Date: 3/25/93

U.S. COMPETITIVENESS PROVISION

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 Contracting Officer that it is not commercially feasible to do so. In the event the Contracting Officer agrees to foreign manufacture, there will be a requirement that the Government's support of the area of technology which was the subject of this waiver petition 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.