

## STATEMENT OF CONSIDERATIONS

ADVANCE WAIVER OF THE GOVERNMENT'S U.S. AND FOREIGN PATENT RIGHTS TO INVENTIONS MADE BY BECHTEL NEVADA CORPORATION OR FCI ENVIRONMENTAL INC. IN THE PERFORMANCE OF COOPERATIVE AGREEMENT NO. DE-FC08-95-NV11863 BETWEEN THE DEPARTMENT OF ENERGY AND FCI ENVIRONMENTAL INC. FOR THE DEVELOPMENT OF A SENSOR PLATFORM FOR A VERSATILE SENSOR PROBE SYSTEM, W(A)-95-033, SAN 666.

### Background

Bechtel Nevada Corporation (Bechtel) operates the research and production facilities for the Department of Energy under DOE M&O Contract DE-AC08-96NV11718. Before Bechtel's M&O Contract became effective on January 1, 1996, EG&G Energy Measurements Division (EG&G/EM) of EG&G Inc. managed and operated the research facility for the Department of Energy under DOE M&O Contract DE-AC03-93NV11265. In the course of its research activities for DOE, Bechtel and its predecessor EG&G/EM have acquired a recognized expertise in the field of remote sensing systems.

DOE considers its contractor-operated research and production facilities such as Bechtel's Remote Sensing Laboratory to be national resources capable of providing significant contribution to the development of new products and processes, creation of jobs, enhancement of the skill level of the U.S. labor force and improvement of U.S. competitiveness.

In support of DOE's technology transfer mission, DOE may enter into a cooperative agreement with a participant, such as FCI Environmental Inc. (FCIE), when DOE will be substantially involved in the performance of the project. See Federal Grant and Cooperative Agreement Act, Pub. L. 97-258 (31 U.S.C. 6301-6308) and 10 CFR 600.201. Also see Attachment A, Cooperative Agreement No. DE-FC08-95NV11863. The Bechtel M&O Contract authorizes, subject to DOE approval, the transfer, for commercial development and use, of technology originally developed by Bechtel or its predecessors for DOE program use.

FCIE, the Petitioner, has an interest in the commercial development and sale of versatile sensor probe systems containing small sensor platforms that can be used in conjunction with a variety of data acquisition sensors (probes). These sensor probes can detect petroleum hydrocarbons, certain chemical agents, and heavy metals including mercury, lead and actinides. FCIE proposed forming a cooperative agreement with DOE to perform a joint research and development project that would give FCIE access to the background experience and expertise of the Remote Sensing Laboratory and aid FCIE in the development of small sensor platforms and versatile sensor probe systems for the commercial market.

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DOE's Defense Program (DOE-DP) has determined that it is in the best interests of DOE to execute a cooperative agreement with FCIE and to have EG&G/EM or its successor, Bechtel, perform, under the terms of its referenced M&O Contract with DOE, a collaborative research project with FCIE in the field of versatile sensor probe systems.

The DOE (Bechtel) - FCIE collaborative R&D project is proposed to be performed over a period of eighteen (18) months. The total cost of the project is estimated to be \$414,000. Of the total cost, DOE's share, funded through the referenced Bechtel Contract, is estimated to be \$220,000. FCIE's share in the form of in-kind contributions is estimated to be \$194,000 and is comprised of \$190,000 in personnel support and \$4,000 in materials and supplies.

Scope of the Waiver

This Advance Waiver is directed to those inventions conceived or first actually reduced to practice by employees of Bechtel (Bechtel Subject Inventions) in the course of its collaborative research and development project with FCIE in the field of versatile sensor probe systems. Subject to the requirements of its M&O Contract with DOE and the conditions of this Advance Waiver, Bechtel may elect title to any Bechtel Subject Invention which is conceived or first actually reduced to practice by employee(s) of Bechtel in the course of the subject collaborative R&D project with FCIE.

This Advance Waiver is also directed to those inventions conceived or first actually reduced to practice by employees of FCIE (FCIE Subject Inventions) in the course of its collaborative research and development project with DOE as represented by Bechtel in the field of versatile sensor probe systems. Although FCIE has petitioned for the exclusive and entire right, title and interest in all disclosed Subject Inventions (see Attachment B, FCIE's Petition, response 1), DOE grants FCIE the first option to elect title to any FCIE Subject Invention, subject to the requirements of the Cooperative Agreement No. DE-FC08-94-NV11863 between DOE and FCIE, which is conceived or first actually reduced to practice in the course of the subject collaborative R&D project with Bechtel. See Attachment A, Appendix A, Article XVIII. Further, DOE grants FCIE the second option to elect to retain title to any Bechtel Subject Invention, which is conceived or first actually reduced to practice in the course of the subject collaborative R&D project, that Bechtel does not elect to retain title. See Attachment A, Appendix A, Article XVIII.

Any joint inventions (Joint Subject Inventions) conceived or first actually reduced to practice by employees of both FCIE and Bechtel in the course of the subject collaborative R&D project shall be governed by 35 U.S.C. 262.

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Excluded from the scope of this Advance Waiver is any invention conceived or first actually reduced to practice by either party in the collaborative R&D project which is determined by DOE to be classified or sensitive under Section 148 of the Atomic Energy Act of 1954, as amended, or which inherently discloses or suggests a DOE weapons program application where such disclosure or suggestion would be detrimental to national security. DOE does not anticipate any such invention from the proposed project.

This waiver of the Government's rights in inventions is subject to the Government's retention of (1) a non-exclusive, non-transferable, irrevocable, paid-up license to practice or to have practiced for or on behalf of the United States each waived subject invention throughout the world, (2) march-in rights comparable to those set out in 35 USC 203, and (3) U.S. Competitiveness.

Analysis

For a number of years, the Remote Sensing Laboratory has been engaged in developing and fielding remote sensing systems using a variety of data acquisition sensors. The Remote Sensing Laboratory has an ongoing mission in support of DP-23 and other DOE programs to develop field deployment sensor technologies capable of identifying specific chemical elements. Such sensors are used in the areas of nonproliferation, treaty verification, national security, and environmental monitoring. For example, these sensors can be deployed to provide continuous monitoring capabilities to identify subsurface plume migration. Development of a new group of small, durability enhanced sensors will expand and strengthen the detection endurance capabilities and will provide added flexibility to the overall program. Developing these sensors is most efficiently accomplished through collaboration with a firm already involved in this technology, but whose products presently do not satisfy DOE's and Bechtel's needs. The current effort will closely integrate these missions, enabling the development of a new sensor architecture for development and deployment of new sensor technologies.

EG&G/EM, acting in conjunction with DOE's Nevada Operations Office, had widely publicized its capabilities in sensor system development. FCIE become aware of the Remote Sensing Laboratory's capabilities through a notice in the Commerce Business Daily. Thus, all of FCIE's competitors within the U.S. have had equal opportunity to submit a request to collaborate with Bechtel's Remote Sensing Laboratory in this type of endeavor. Accordingly, there has been ample fairness of opportunity for other competitors to enter into a similar project had they desired to do so.

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FCIE is a U.S. corporation organized under the laws of the State of Nevada and qualifies as a small business. FCIE's primary manufacturing site is in Las Vegas, Nevada. Further, FCIE does more than 90% of its business in the United States. FCIE has a major commitment to the development and commercialization of optical waveguide chemical, biochemical, and radiochemical sensors. The Petitioner holds 15 U.S. Patents, seven issued foreign patents and several U.S. and foreign patent applications relating to optical waveguide sensors. See Attachment B, FCIE's Petition, response 4. Further, FCIE specializes in platforms that include fiber optics, optical waveguides and optical microchips. Thus, FCIE has background expertise in environmental sensing instruments and considers the optical waveguide sensor probes to be critical to advancement of various chemical sensor programs.

FCIE believes that this collaboration will produce a more cost effective, interchangeable probe architecture. See Attachment B, FCIE's Petition, response 14. FCIE will advance their entry into the small business arena in this field, which would ultimately result in sensors that DOE and other federal entities can use in carrying out environmental monitoring and remediation missions. This project will implement an improved sensor architecture which is amenable to a number of element-specific sensors. FCIE has agreed that any products, processes or services utilizing intellectual property, including any United States patent resulting from a Subject Invention, shall be manufactured substantially in the United States. See Attachment A, App. A, Article XXV.

Both FCIE and DOE have executed a Cooperative Agreement No. DE-FC08-95-NV11863. FCIE was timely in submitting their petition, which was subsequently revised and executed, for advance waiver within 30 days of execution of the Cooperative Agreement in accordance with 41 CFR 9-9.109-6(d)(2). See Attachment B.

Conclusion/Recommendation

DOE has determined there is a need for a U.S. based source of commercial sensors for a variety of environmental hazards. FCIE has shown a desire and commitment to develop and commercialize small sensor platforms for a variety of sensor probe technologies. Bechtel's Remote Sensing Laboratory has shown a willingness to collaboratively work to fill the DOE need and accomplish the FCIE objective.

FCIE's competitors within the U.S. have had equal opportunity to submit a request to collaborate with the Remote Sensing Laboratory in this type of endeavor. Accordingly, there has been ample fairness of opportunity afforded to other competitors who may be interested in entering this market. Granting of this waiver will increase the number

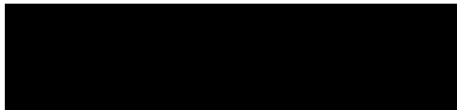
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of companies having expertise in environmental sensor technology. Moreover, the, U.S. Government currently owns the technology for several types of data acquisition sensors and DOE will be benefited by the U.S. Government's retaining a license in the pertinent technology developed under the present advance waiver.

This waiver should not cause any unacceptable market concentration or adverse impact on competition. See Attachment B, FCIE's Petition, response 9.

For the foregoing reasons and in view of the objectives and considerations set forth in 10 CFR 784 all of which have been considered, it is recommended that the subject Advance Waiver be granted.



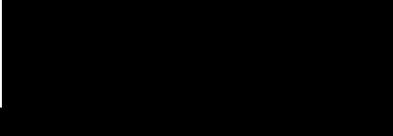
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Based on the foregoing Statement of Considerations and the representations in the attached waiver petition, it is determined that the interests of the United States and the general public will best be served by a waiver of patent rights of the scope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

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Office of Development  
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Defense Programs, DP-17

1/30/97  
Date

APPROVAL:

  
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2-4-97  
Date