

STATEMENT OF CONSIDERATIONS

CLASS WAIVER OF THE GOVERNMENT'S U.S. AND FOREIGN COMMERCIAL
PATENT LICENSING RIGHTS TO CERTAIN FIELDS OF USE OF INVENTIONS
MADE IN THE COURSE OF DOE'S ATOMIC VAPOR LASER ISOTOPE
SEPARATION RESEARCH AND DEVELOPMENT PROGRAM UNDER DOE
OPERATING CONTRACTS DE-AC05-84OR21400 AND DE-AC05-76OR00001;
WC-92-003; ORO-522

Martin Marietta Energy Systems, Inc. (Energy Systems), a for-profit corporation, operates certain Government-owned research, production, and weapons facilities in Oak Ridge, Tennessee, under prime Contract DE-AC05-84OR21400 (21400 Contract) with the Department of Energy (DOE). Energy Systems and its predecessor, Union Carbide, have since the 1970's conducted a program of research and development under the 21400 Contract on the Atomic Vapor Laser Isotope Separation (AVLIS) technology, to be used for uranium enrichment and enrichment of Special Nuclear Materials as that term is defined in the Atomic Energy Act of 1954, as amended. Since April 1, 1991 Energy Systems and DOE have conducted the AVLIS program under Contract DE-AC05-76OR00001 (00001 Contract). DOE funding for development of the AVLIS technology to date totals approximately \$1.1 billion.

The 21400 Contract includes a Class Patent Waiver of title to inventions that are conceived or first reduced to practice under the 21400 Contract. Among the inventions excluded from the Class Patent Waiver of the 21400 Contract are those that relate to uranium enrichment including isotope separation; inventions relating to the AVLIS technology fall within the term uranium enrichment and are thus excluded from that Class Patent Waiver. A similar Class Patent Waiver is proposed for the 00001 Contract that will exclude inventions related to uranium enrichment including isotope separation, thus excluding inventions relating to AVLIS technology.

On June 24, 1991, Clyde C. Hopkins, President of Martin Marietta Energy Systems, requested that DOE grant a class waiver to AVLIS inventions other than for enrichment of uranium and Special Nuclear Material. William H. Young, Assistant Secretary for Nuclear Energy, responded to this request by letter dated July 3, 1991, that included fourteen conditions to the granting of the waiver. Therefore, granting of this Class Patent Waiver is subject to the fourteen conditions under which Energy Systems may license AVLIS inventions.

It is a goal of technology transfer to promote use of government sponsored research in the commercial arena when the use is one that is not in an excluded category. DOE has for several years recognized the potential commercial value of its AVLIS technology in fields of use other than uranium enrichment and enrichment of Special Nuclear Materials.

Energy Systems currently has the right to file identified waiver petitions on inventions in excluded categories including inventions relating to the AVLIS technology. However, this process of preparing and processing each petition

imposes a substantial front end administrative burden, not only on Energy Systems but on DOE as well.

Recognizing the need for the United States to improve industrial competitiveness, Congress recently enacted the National Competitiveness Technology Transfer Act of 1989 (Public Law 101-189, 15 USC 3710(a)). The purposes of the Act are to promote technology transfer between Federal laboratories and U.S. industry and to enhance collaboration between universities, U.S. industry and the Federal laboratories in order to foster the development of technologies in areas of significant economic potential. The Act makes technology transfer a mission of DOE's laboratories.

The Act also authorizes these laboratories, such as Energy Systems, to enter Cooperative Research and Development Agreements (CRADAs) with one or more non-Federal parties for research and development to assist the transfer of Government-funded technologies to the commercial marketplace, thereby enhancing U.S. competitiveness. With the overall goal of incorporating into the main stream of United States commerce the research results and commercial benefits from the AVLIS program in fields of use other than uranium enrichment and enrichment of Special Nuclear Materials in the most expeditious manner, it is believed to be in the best interest of the Government and the general public to grant a Class Patent Waiver of commercial rights to certain identified inventions made by Energy Systems under the above-identified contracts, including CRADAs entered into under the 00001 Contract, that relate to the AVLIS technology as set forth herein.

The purpose of this Class Patent Waiver is not to waive title to inventions: it is to waive only the right to commercially license (including the right to commercially sublicense) AVLIS technology to inventions in fields of use other than enrichment of uranium and Special Nuclear Material. Title to all inventions related to the AVLIS technology under the above-identified contracts remains with the Government. The scope of the Waiver includes all subject inventions that relate to the AVLIS technology that have already been identified and reported to DOE by Energy Systems under 21400 Contract and 00001 Contract. This Waiver also includes all future AVLIS inventions that will be funded by Uranium Enrichment under the 00001 Contract, are identified and reported to DOE by Energy Systems after the date of this Waiver, and that are elected in accordance with the procedures set forth herein.

With regard to inventions arising under DOE approved CRADAs entered into by Energy Systems and participants under the 00001 Contract, the effect of this waiver is to waive to Energy Systems and participants only rights to commercially license (and sublicense) the AVLIS technology in fields of use other than enrichment of uranium and Special Nuclear Material. Title to all inventions arising under CRADAs related to the AVLIS technology under the 00001 Contract remains with the Government.

With regard to waiver of commercialization rights to CRADA participants, implementation is to be by execution of the DOE approved CRADA. Certain conditions shall be included in the CRADA providing the following:

1. The participant will obtain, for the benefit of the Government, royalty free use of any improvements applicable to enrichment of uranium and Special Nuclear Material.
2. The participant will conduct all licensing activities regarding this technology to ensure maximum benefit to U.S. competitiveness. Related to this the participant shall not grant exclusive field of use licenses without obtaining DOE approval before negotiating such a license.
3. DOE will retain a royalty free license for all AVLIS technology for any future uranium enrichment AVLIS deployment contractor.
4. The participant will address all export control, unclassified controlled nuclear information (UCNI) and national security concerns for each proposed license.

Accordingly it is to be understood that the effect of this Class Patent Waiver is to grant to Energy Systems (and to CRADA participants) commercialization rights to inventions made by its employees that relate to the AVLIS technology for fields of use other than enriching uranium and Special Nuclear Material. Excluded from this Waiver is the right to license the AVLIS technology for the enrichment of uranium or Special Nuclear Materials. A Uranium Enrichment Corporation is being proposed by the Government for the purpose of developing and marketing the AVLIS technology for uranium and Special Nuclear Material enrichment uses; therefore, the Government will retain all rights to this technology for those uses and make assignment of these rights to the corporation. Also, based on the substantial equity DOE has invested in the AVLIS technology for enrichment of uranium and Special Nuclear Material, Energy Systems agrees to negotiate to grant to DOE a royalty free nonexclusive license for any improvements to AVLIS technology made by licensees in fields of use of enrichment of uranium and Special Nuclear Materials. Energy Systems will retain commercialization rights in fields of use other than enrichment of uranium and Special Nuclear Material and will continue to receive royalties for those fields of use. Further excluded from the Class Waiver is all classified technology.

Energy Systems has developed, and DOE has approved, policy procedures to avoid employee and organizational conflicts of interest, or appearances of conflicts of interest. These procedures include regulations related to the financial interests of employees and their families as they relate to activities with Energy Systems as well as with companies that enter into CRADAs with Energy Systems. They also include procedures by which Energy Systems can monitor the conflicts of interest regulations. Activities undertaken to satisfy the procedure will be documented to provide DOE with assurances that conflicts of interest are being avoided.

Most of the AVLIS inventions in fields of use other than enrichment of uranium and Special Nuclear Materials require additional development before they are available in the commercial marketplace since they are founded upon basic or advanced research. Additionally, many are conceptual in nature and are on a laboratory or proof-of-principle scale. Scale-up to a commercial size

demonstration of the inventive concept is often a prerequisite to negotiating royalty-bearing licenses. Also, many of the inventions arising out of the AVLIS program will require substantial capital (such as start up, engineering, design and marketing) in order to translate the invention into commercial reality.

In order to encourage such development and capital investment by the private sector, this Class Patent Waiver will create sufficient exclusive rights to justify risk capital to expeditiously promote and move the technology in the fields of use other than enrichment of uranium and Special Nuclear Materials into the commercial marketplace and thereby make the benefits of the AVLIS program for these fields of use widely available to the public in the shortest practicable time.

Additionally, under the authority of the "National Competitiveness Technology Transfer Act of 1989" (P.L. 101-189) Energy Systems is authorized to enter into Cooperative Research and Development Agreements (CRADAs) with universities, the private sector and other Federal laboratories for the purpose of promoting technology transfer between the Federal laboratories and the private sector in the United States. By having a Class Patent Waiver of commercialization rights in the AVLIS technology Energy Systems will be able to combine, where appropriate, these waived rights with those waived to Energy Systems under the separately issued Class Patent Waiver for CRADAs through license agreements with cost-sharing participants under the CRADAs, thereby enhancing the movement of the waived rights to the commercial marketplace.

Furthermore, the grant of this Waiver will enable DOE to take advantage of the already proven technology transfer capabilities of Energy Systems which has over the last 8 years established and operated a very successful technology transfer program including the granting of 56 licenses covering 34 waived inventions and twelve released copyrights. During this period royalty receipts from the licensing activities are in excess of \$1.6 million and commercial sales by licensees (based on running royalties received) are in excess of \$46 million. Permitting Energy Systems to have rights to commercially license inventions related to the AVLIS technology in fields of use other than the enrichment of uranium and Special Nuclear Materials should further enhance the technology transfer initiatives of the Department through the 00001 Contract.

Technology transfer is currently an element in the award fee determination. This evaluation of Energy Systems' performance serves as an additional justification for the grant of this Waiver as set forth herein.

Lastly, Energy Systems has agreed to attempt to commercialize the waived rights within five years from the time this Waiver is effective. This commitment to early commercialization by Energy Systems will best promote the commercial utilization of such inventions in the fields of end use and application as set forth herein and make the benefits of the research effort conducted under the 00001 Contract widely available to the public in the shortest practicable time, consistent with the objectives and considerations of DOE's waiver regulations.

Upon grant of this Class Patent Waiver, the Patent Rights Clause of the 00001 Contract will be modified to implement the terms and conditions of this Class Patent Waiver. Implementation of this Waiver will be by a simple procedure which requires:

- (1) Energy System reporting of the invention within the times specified in the Patent Rights Clause and identifying by DOE B&R code the funding sponsor in the invention disclosure;
- (2) Energy Systems electing in writing whether or not to retain rights to commercially license the invention at the time of disclosure or within one year of disclosure;
- (3) Representation by Energy Systems after reasonable internal inquiry that the invention is not excluded from the Class Waiver;
- (4) Representation by Energy Systems to its best knowledge and belief that the invention does not fall within international agreements or treaties of the Government which are listed in Exhibit A of the Contract; and
- (5) Representation by Energy Systems that it will attempt to commercialize the invention through its licensees within five years from the time this Waiver is effective.
- (6) Representation by Energy Systems that the Business Plan and Licensing Strategy Plan, as approved by DOE, will be followed.

After review of each election of commercialization rights and relevant facts, Patent Counsel, Department of Energy Field Office, Oak Ridge, will certify whether this Waiver is applicable to the invention.

The election for inventions shall not become effective until approved by the Patent Counsel who shall use his best efforts to reach a determination within ninety (90) days after receipt by Patent Counsel of the election letter. This Waiver of the Government's commercialization rights as set forth herein is subject to the Government's retention of march-in rights in accordance with paragraph (j) of the Patent Rights Clause of the 21400 Contract. Although paragraph (j) refers to "title", for the purposes of this Class Patent Waiver march-in rights will also apply to rights to commercially license; therefore, when paragraph (j) is applied to AVLIS technology the words "rights to commercially license" are to be substituted for the word "title". DOE has, in addition to the standard Government march-in rights set forth in subparagraph (j)(1) of the Patent Rights Clause, the right to require Energy Systems to grant to responsible applicant(s) a license(s) as specified in subparagraph (j)(2) of the Patent Rights Clause.

The grant of this Waiver should not result in adverse effects on competition or market concentration since commercial use of many of the AVLIS inventions is conceptual and has yet to be introduced into the marketplace. In addition, the AVLIS technology is only one of many processes available for isotope separation, thus the grant of this waiver does not create a situation where competition is impeded.

Energy Systems will prepare a Business Plan and a Licensing Strategy Plan for commercialization of AVLIS technology and these plans will be submitted to DOE for concurrence after the granting of the Class Patent Waiver. These plans will include the procedures undertaken to ensure widespread notice and U.S. industrial competitiveness.

Energy Systems will prepare procedures to ensure widespread notice of availability of the AVLIS technology. As an initial activity Energy Systems shall prepare announcements for the "Commerce Business Daily" and "Federal Register" notifying interested parties that DOE has waived the right to license, but not title to, certain AVLIS technology for certain field of use applications and that the technology is available for CRADA and/or licensing activities. As the program continues Energy Systems will conduct additional activities, such as workshops, media presentations, mailouts, etc., that will assure fairness of opportunity to all who wish to participate in the AVLIS commercialization program. Activities undertaken to satisfy the procedures will be documented to provide DOE with assurances that fairness of opportunity is being given.

The Licensing Strategy Plan will also incorporate National Academy of Sciences study results into its technology transfer plans for the AVLIS technology, as well as address all export control, unclassified controlled nuclear information and national security concerns for each proposed license.

This Waiver is also subject to DOE's right to require periodic reports on the utilization or efforts that are being made at obtaining utilization for the inventions to insure the technology is being offered and licensed for commercial application. In addition, because of the national security sensitivity of the AVLIS technology, DOE may require other reports concerning any matter relating to the commercial licensing of the AVLIS technology.

For any intellectual property where Energy Systems wishes to grant an exclusive field of use sublicense, Energy systems will obtain DOE concurrences before negotiating such sublicenses.



Energy Systems and DOE will negotiate a percentage of all gross royalties or other income received from licensing of AVLIS technology to be returned to the Treasury where such income exceeds the needs of a reasonable technology transfer program.

Attached to this Statement of Considerations is a list of invention disclosures that were reported prior to the granting of this Class Patent Waiver. Within ninety days after the granting of the Class Patent Waiver, Energy Systems shall submit an election letter or letters informing DOE which of those listed inventions that it elects. The implementation of these elected inventions will be in accordance with the procedures set forth herein. Included in the list are inventions that were made by joint inventors from both Energy Systems and Lawrence Livermore National Laboratory (LLNL). This Class Patent Waiver applies only to the undivided interest of Energy Systems and not the interest held by LLNL. Energy Systems and LLNL will reach an

agreement on the strategy for commercialization of elected joint inventions listed in the attachment as well as those reported in the future.

It is believed that the grant to Energy Systems and CRADA participants of this Waiver of the Government's rights to commercially license inventions that relate to the AVLIS proces in the specified fields of use will further DOE's mission of technology transfer, enhance U.S. competitiveness, assure fairness of opportunity and will have no adverse impact on national security.

Accordingly, in view of the statutory objectives to be achieved and the factors to be considered under DOE's statutory waiver policy, the objectives of Public Law 101-189 and Executive Order 12591, all of which have been considered, it is recommended that this Waiver as set forth above will best serve the interests of the United States and the general public. It is therefore recommended that this Waiver be granted, subject to concurrence by DOE of the Business Plan and the Licensing Strategy Plan.

Robert M. Poteat
Patent Counsel
Oak Ridge Operations Office

Based on the foregoing Statement of Considerations, it is determined that the interest of the United States and the general public will best be served by waiver of rights to commercially license as set forth herein and, therefore, the waiver is granted subject to the terms of the 21400 contract and the 00001 Contract as amended by addition of the Patent Rights Clause to implement this Class Waiver and subject to concurrence by DOE of the Business Plan and the Licensing Strategy Plan. This waiver shall not affect any waiver previously granted.

CONCURRENCE:

Richard A. Claytor
Assistant Secretary
for Defense Programs

Date:_____

William H. Young
Assistant Secretary
for Nuclear Energy

Date:_____

Richard E. Constant
Assistant General Counsel
for Intellectual Property

Date:_____