

PROPOSED STATEMENT OF CONSIDERATIONS

CLASS ADVANCE WAIVER OF THE GOVERNMENT'S DOMESTIC AND FOREIGN PATENT RIGHTS AND COPYRIGHT UNDER DOMESTIC FIRST AND SECOND TIER SUBCONTRACTS ISSUED BY LLNL FOR ANL/LBNL/LLNL/LANL/ORNL/ SNL FOR THE EXASCALE COMPUTING PROJECT ; DOE WAIVER NO. W(C) 2016-TBD

The Department of Energy (DOE) has a long history of deploying leading-edge computing capability for science and national security. Going forward, DOE's compelling science, energy assurance and national security needs will require a thousand-fold increase in usable computing power, delivered as quickly and energy-efficiently as possible.

Within DOE's Office of Science (SC), the mission of the Advanced Scientific Computing Research (ASCR) Program is to discover, develop, and deploy computational and networking capabilities to analyze, model, simulate, and predict complex phenomena. A particular challenge of this program is fulfilling the science potential of emerging computing systems and other novel computing architectures, which will require numerous significant modifications to today's tools and techniques to deliver on the promise of exascale science.

Within DOE's National Nuclear Security Administration (NNSA), the mission of the Advanced Simulation and Computing (ASC) Program supports NNSA Defense Program's emphasis on predictive simulation-based science. Under ASC, computer simulation capabilities are developed to analyze and predict the performance, safety, and reliability of nuclear weapons and to certify their functionality. Modern simulations on powerful computing systems are key to supporting our national security mission. As the nuclear stockpile moves further from the nuclear test base through either the natural aging of today's stockpile or introduction of modifications, the realism and accuracy of ASC simulations must further increase through development of improved physics models and methods requiring ever greater computational resources.

In 2016, the DOE will begin the Exascale Computing Project (ECP). ECP is a joint effort by DOE Office of Science and DOE National Nuclear Security Administration that will focus on advanced simulation through a capable exascale computing program emphasizing sustained performance on relevant applications and data analytic computing to support their missions. The hardware efforts in ECP seek to realize capable exascale systems in the 2023-2025 timeframe by building on the existing DOE-SC and NNSA/ASC investments in the FastForward and DesignForward Programs, software R&D, and application development and readiness projects.

The ECP plan is structured into four focus areas:

Application Development: The exascale application development effort will create and/or

enhance important DOE applications through development of models, algorithms, and methods; integration of software and hardware using co-design methodologies; systematic improvement of exascale system readiness and utilization; and demonstration and assessment of effective software/hardware integration.

Software Technology: To achieve the full potential of exascale computing, the software stack on which DOE SC and NNSA applications rely will be enhanced to meet the needs of exascale applications and evolved to utilize the features of exascale hardware architectures efficiently.

Hardware Technology: The Hardware Technology focus area supports vendor and lab hardware R&D activities required to design at least two capable exascale systems with diverse architectural features in support of exascale system acquisitions.

Exascale Systems: This area bridges the gaps between the usual scope of the DOE SC and NNSA HPC facilities and the extra resources required to field the first exascale systems. This focus area includes funding for non-recurring engineering (NRE) work beginning in 2019, supplemental acquisition funding, additional site preparations, and funding for prototypes and testbeds for application development and software testing. System procurement activities will be coordinated with the DOE HPC facilities' existing 2023 system acquisitions.

SC and NNSA jointly formed a consortium to participate in ECP which includes representation from six DOE Laboratories: Argonne National Laboratory (ANL), Lawrence Berkeley National Laboratory (LBNL), Lawrence Livermore National Laboratory (LLNL), Los Alamos National Laboratory (LANL), Oak Ridge National Laboratory (ORNL), and Sandia National Laboratories (SNL).

In July 2016, LLNL plans to release a Request for Proposal (RFP) on behalf of the consortium with the desired purpose of selecting responsive and responsible Offerors for the area of technology identified by the Hardware Technology focus area of the DOE Exascale Program.

The *PathForward* Phase of the DOE Exascale Computing Program

With the four-year FastForward and DesignForward Programs ending in 2017, DOE SC and NNSA have planned a follow-up program called PathForward. This new Program will focus on the Hardware Technology area.

PathForward seeks solutions that will improve application performance and developer productivity while maximizing energy efficiency and reliability of an exascale system. The proposals submitted in response to this solicitation should:

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1. Substantially improve the competitiveness of the vendor's exascale system proposals in 2019, where application performance figures of merit will be the most important criteria.
2. Improve the vendor's confidence in the value and feasibility of aggressive advanced technology options that they are willing to propose for the exascale system acquisitions.
3. Identify the most promising technology options that would be included in 2019 proposals for the exascale systems.

The proposals submitted in response to this solicitation should address the impact of the proposed R&D on both DOE extreme-scale mission applications as well as the broader HPC community. Offerors are expected to leverage the DOE SC and NNSA Co-Design Centers and Application projects to ensure solutions are aligned with DOE needs. While DOE's extreme-scale computer requirements are a driving factor, these projects should also exhibit the potential for technology adoption by broader segments of the market outside of DOE supercomputer installations. This public-private partnership between industry and the DOE will aid the development of technology that reduces economic and manufacturing barriers to building systems that deliver exascale performance, and the partnership will also further DOE's goal that the selected technologies should have the potential to impact low-power embedded, cloud/datacenter and midrange HPC applications. This ensures that DOE's investment furthers a sustainable software/hardware ecosystem supported by applications across not only HPC but also the broader IT industry. This breadth will result in an increase in the consortium's ability to leverage commercial developments. The consortium does not intend to fund the engineering of near-term capabilities that are already on existing product roadmaps.

This Program may fund additional projects under the PathForward phase of the Exascale Computing Project to be awarded by any consortium Laboratory. For example, vendors funded under PathForward may propose follow-on research in node or related system development.

The Allocation of Patent Rights

A small business or non-profit organization will retain the patent rights to its subject inventions under the Bayh-Dole Act. See 35 USC 200-212. These subcontracts will contain standard clause DEAR 952.227-11 Patent Rights—Retention by the Contractor.

For non-Bayh-Dole subcontractors, the Government retains title to subcontractor's subject inventions under DEAR 952.227-13 Patent Rights—Acquisition by the Government. However, a subcontractor that agrees to cost-share by an amount at least 40% of the total cost of the subcontract shall qualify for this Class Advance Waiver where DOE agrees to waive, in advance, patent rights to the subcontractor such that it may elect its subject inventions. See Appendix A, paragraph (b) of 10 CFR 784.12 PATENT RIGHTS--WAIVER

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(JUL 1996). The patent rights waiver is subject to the retained government-use license, march-in rights, reporting requirements, DOE approval of assignments, 35 U.S.C. 204, and a U.S. Competitiveness provision (paragraph (t)), which are all contained in the clause. See Appendix A.

If a non-Bayh-Dole subcontractor under the subject RFP does not agree to cost-share at least 40% of the total contract cost, that subcontractor will receive the standard DEAR patent and FAR data clauses in connection with the R&D procurement. However, such a subcontractor can still seek DOE Headquarters Program approval to have this Class Advance Waiver apply. In the alternative, the subcontractor may petition the government for either a separate Advance Waiver for its specific subcontract or an Identified Invention Waiver to obtain title to specific subject inventions as developed during the performance of the subcontract.

The Allocation of Rights in Computer Software

The Bayh-Dole Act only applies to the allocation of patent rights. However, many subcontractors prefer to have advance rights in technical data developed under their subcontracts. Therefore, this Class Advance Waiver also allows a domestic subcontractor (small business, non-profit or for-profit organization) to assert copyright in computer software without the Contracting Officer's prior approval. Under the subject PathForward Program, DOE agrees, in advance, to authorize the subcontractor to assert copyright, without the Contracting Officer's prior approval, in software produced under the subcontract by its employees. See Appendix B, paragraph (c)(1)(iii). The right to assert copyright in software is subject to a limited government-use license to allow the subcontractor sufficient time to commercialize the computer software. In the limited government-use license, the subcontractor grants to the Government and others acting in its behalf, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government. However, the limited government-use license in copyrighted software will revert to a broad Government license, which allows the Government to distribute copies to the public, if either the subcontractor abandons the commercialization of the software or DOE march-in rights are exercised, for example, where the subcontractor has not taken effective steps to commercialize the software. In addition, when the Government releases the software as Open Source Software, the broad Government license applies to allow distribution to the public without any exceptions.

The deliverables expected will be detailed reports of technical activities, performance results, and lessons learned associated with the endeavor. Also, hardware may be delivered to the Laboratories under the subcontracts. If software is a deliverable under a subcontract the Laboratories should consult with ASCR and ASC (and with DOE Patent Counsel concurrence) to determine whether, if any, software developed under specific subcontracts should be (a) delivered to the Laboratory and DOE's Energy Science and Technology

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Software Center (ESTSC) and/or (b) distributed as Open Source Software. DOE believes granting the copyright in software is warranted here in order to stimulate developed end products to purchase in the future.

The Delayed Release of Unpublished Data—Other Data

Since these subcontracts are for long-term commercialization activity, many companies will want to protect their data generated under the subcontracts from public release. However, DOE's policy (and statutory provisions) is to publicly release technical data that is funded by the U.S. Government. This policy promotes both the commercialization of the technology and the further development of knowledge in the academic/research community. However, many companies would be reluctant to enter into this subcontract if its competitors could have immediate access to the technology. DOE could limit the data delivered to the Laboratories and DOE; however, the Laboratories need to receive all pertinent data necessary to carry out the objectives of the Government's Program. Therefore, DOE Program supports a delayed release of up to five years of technical data developed under the subcontracts in order to allow the subcontractor the opportunity for a competitive advantage to commercialize this technology. There are several exceptions where DOE may release the data, for example, when responding to a request under the Freedom of Information Act (FOIA). See Appendix B, Rights in Data Modifications, paragraph (d)(3) for a full list of exceptions.

Foreign Subcontracts

The provisions of this Class Advance Waiver do not automatically apply to any foreign owned or controlled subcontractors at any tier. However, the Laboratories should consult with DOE Patent Counsel and HQ Program to determine whether a foreign subcontractor could be granted the above rights or require the foreign subcontractor to submit a separate petition for an Advance Waiver to be approved by DOE GC.

Conclusion

This Class Advance Waiver and the terms of the intellectual property clauses included within the subject subcontracts are meant to cover the scope of the work under the PathForward Program and shall not serve as precedent for any follow-on work to be negotiated separately with the selected subcontractors. Also, this Class Advance Waiver shall apply to second tier subcontracts that a first tier subcontractor issues. However, this Class Advance Waiver will not apply to foreign owned or controlled companies.

DOE Patent Counsel will qualify each subcontractor by written certification by the Laboratory issuing the subcontract that this Class Advance Waiver is applicable. Such certification will include verification of the minimum percentage cost share by the subcontractor, a determination that the subcontractor is a U.S. company, and verification of the acceptability of the terms and conditions of the subcontract.

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If any company does not qualify for this Class Advance Waiver or is not satisfied with the terms and conditions of the subcontract necessary to qualify for this Waiver, then that company may separately petition DOE for its own Advance Waiver.

For the foregoing reasons, and in view of the objectives and considerations set forth in 10 CFR 784, it is recommended that the requested waiver be granted for domestic first tier and second tier subcontracts issued under the PathForward Program.

Date:_____

Patent Attorney
DOE/NNSA Albuquerque

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Based on the foregoing Statement of Considerations, it is determined that the interests of the United States and the general public will best be served by waiver of the United States' domestic and foreign patent rights, copyright in software copyright and delayed release of technical data as set forth herein, and therefore, the waiver is granted. This waiver shall not apply to a modification or extension of the subcontracts where, through such modification or extension, the purpose, scope or DOE cost of the subcontracts has been substantially altered. This waiver shall not affect any waiver previously granted.

CONCURRENCE:

J. Steve Binkley
Associate Director
Advanced Scientific Computing Research

Office of Science, DOE

Douglas Wade
Acting Director
Advanced Simulation and Computing and
Institutional Research and Development
Office of Defense Programs, NNSA

Date: _____

Date: _____

APPROVED:

John T. Lucas
Assistant General Counsel
for Technology Transfer and Intellectual Property

Date: _____

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APPENDIX A

10 CFR 784.12 PATENT RIGHTS--WAIVER (JUL 1996)

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(a) Definitions.

As used in this clause:

- (1) "Background patent" means a domestic patent covering an invention or discovery which is not a Subject Invention and which is owned or controlled by the Contractor at any time through the completion of this contract:
 - (i) Which the Contractor, but not the Government, has the right to license to others without obligation to pay royalties thereon, and
 - (ii) Infringement of which cannot reasonably be avoided upon the practice of any specific process, method, machine, manufacture or composition of matter (including relatively minor modifications thereof) which is a subject of the research, development, or demonstration work performed under this contract.
- (2) "Contract" means any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work, and includes any assignment or substitution of parties.
- (3) "DOE patent waiver regulations" means the Department of Energy patent waiver regulations at 10 CFR Part 784.
- (4) "Invention" as used in this clause, means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code or any novel variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).
- (5) "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.
- (6) "Nonprofit organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.
- (7) "Patent Counsel" means the Department of Energy Patent Counsel assisting the procuring activity.
- (8) "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and

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that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

- (9) "Secretary" means the Secretary of Energy.
- (10) "Small business firm" means a small business concern as defined at Section 2 of the Pub. L. 85-536 (15 U.S.C. 532) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.
- (11) "Subject invention" means any invention of the Contractor conceived or first actually reduced to practice in the course of or under this contract, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act (7 U.S.C. 2401(d)) must also occur during the period of contract performance.

(b) Allocation of principal rights.

Whereas DOE has granted a waiver of rights to subject inventions to the Contractor, the Contractor may elect to retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Contractor elects to retain title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

(c) Invention disclosure, election of title, and filing of patent applications by Contractor.

- (1) The Contractor shall disclose each subject invention to the Patent Counsel within six months after conception or first actual reduction to practice, whichever occurs first in the course of or under this contract, but in any event, prior to any sale, public use, or public disclosure of such invention known to the Contractor. The disclosure to the Patent Counsel shall be in the form of a written report and shall identify the inventors and the contract under which the invention was made. It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose, operation, and physical, chemical, biological, or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale, or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the Patent Counsel, the Contractor shall promptly notify the Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.
- (2) The Contractor shall elect in writing whether or not to retain title to any such invention by notifying the Patent Counsel at the time of disclosure or within 8 months of disclosure, as to those countries (including the United States) in which the Contractor will retain title; provided, that in any case where publication, on sale, or public use has initiated the 1-year statutory period wherein valid patent protection can still be obtained in the United States, the period of election of title may be shortened by the agency to a date that is no more than 60

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days prior to the end of the statutory period. The Contractor shall notify the Patent Counsel as to those countries (including the United States) in which the Contractor will retain title not later than 60 days prior to the end of the statutory period.

- (3) The Contractor shall file its initial patent application on an elected invention within 1 year after election, but not later than at least 60 days prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor shall file patent applications in additional countries (including the European Patent Office and under the Patent Cooperation Treaty) within either 10 months of the corresponding initial patent application or 6 months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where foreign filing has been prohibited by a Secrecy Order.
 - (4) Requests for extension of the time for disclosure to the Patent Counsel, election, and filing may, at the discretion of DOE, be granted, and will normally be granted unless the Patent Counsel has reason to believe that a particular extension would prejudice the Government's interest.
- (d) Conditions when the Government may obtain title notwithstanding an existing waiver.

The Contractor shall convey to DOE, upon written request, title to any subject invention--

- (1) If the Contractor elects not to retain title to a subject invention;
 - (2) If the Contractor fails to disclose or elect the subject invention within the times specified in paragraph (c) of this clause (provided that DOE may only request title within 60 days after learning of the Contractor's failure to report or elect within the specified times);
 - (3) In those countries in which the Contractor fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Contractor has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of DOE, the Contractor shall continue to retain title in that country;
 - (4) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention; or
 - (5) If the waiver authorizing the use of this clause is terminated as provided in paragraph (p) of this clause.
- (e) Minimum rights to Contractor when the Government retains title.
- (1) The Contractor shall retain a nonexclusive, royalty-free license throughout the world in each subject invention to which the Government obtains title under paragraph (d) of this clause except if the Contractor fails to disclose the subject invention within the times specified in paragraph (c) of this clause. The Contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes

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the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

- (2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions in 37 CFR part 404 and DOE licensing regulations. This license shall not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.
 - (3) Before revocation or modification of the license, DOE shall furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor shall be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with applicable agency licensing regulations and 37 CFR part 404 concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.
- (f) Contractor action to protect the Government's interest.
- (1) The Contractor agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to:
 - (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and
 - (ii) convey title to DOE when requested under paragraph (d) and subparagraph (n)(2) of this clause, and to enable the Government to obtain patent protection throughout the world in that subject invention.
 - (2) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under contract in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by paragraph (c)(1) of this clause. The Contractor shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.
 - (3) The Contractor shall notify DOE of any decision not to continue the prosecution of a patent

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- application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.
- (4) The Contractor agrees to include, within the specification of any United States patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under (identify the contract) awarded by DOE. The Government has certain rights in this invention."
 - (5) The Contractor shall establish and maintain active and effective procedures to assure that subject inventions are promptly identified and disclosed to Contractor personnel responsible for patent matters within 6 months of conception and/or first actual reduction to practice, whichever occurs first in the course of or under this contract. These procedures shall include the maintenance of laboratory notebooks or equivalent records and other records as are reasonably necessary to document the conception and/or the first actual reduction to practice of subject inventions, and records that show that the procedures for identifying and disclosing the inventions are followed. Upon request, the Contractor shall furnish the Patent Counsel a description of such procedures for evaluation and for determination as to their effectiveness.
 - (6) The Contractor agrees, when licensing a subject invention, to arrange to avoid royalty charges on acquisitions involving Government funds, including funds derived through Military Assistance Program of the Government or otherwise derived through the Government; to refund any amounts received as royalty charges on the subject invention in acquisitions for, or on behalf of, the Government; and to provide for such refund in any instrument transferring rights in the invention to any party.
 - (7) The Contractor shall furnish the Patent Counsel the following:
 - (i) Interim reports every 12 months (or such longer period as may be specified by the Patent Counsel) from the date of the contract, listing subject inventions during that period and certifying that all subject inventions have been disclosed or that there are no such inventions.
 - (ii) A final report, within 3 months after completion of the contracted work, listing all subject inventions or certifying that there were no such inventions, and listing all subcontracts at any tier containing a patent rights clause or certifying that there were no such subcontracts.
 - (8) The Contractor shall promptly notify the Patent Counsel in writing upon the award of any subcontract at any tier containing a patent rights clause by identifying the subcontractor, the applicable patent rights clause, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon request of the Patent Counsel, the Contractor shall furnish a copy of such subcontract, and no more frequently than annually, a listing of the subcontracts that have been awarded.
 - (9) In the event of a refusal by a prospective subcontractor to accept one of the clauses in subparagraph (g)(1) or (2) below, the Contractor-

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- (i) shall promptly submit a written notice to the Contracting Officer setting forth the subcontractor's reasons for such refusal and other pertinent information that may expedite disposition of the matter, and
 - (ii) shall not proceed with such subcontracting without the written authorization of the Contracting Officer.
- (10) The Contractor shall provide, upon request, the filing date, serial number and title, a copy of the patent application (including an English-language version if filed in a language other than English), and patent number and issue date for any subject invention for which the Contractor has retained title.
- (11) Upon request, the Contractor shall furnish the Government an irrevocable power to inspect and make copies of the patent application file.
- (g) Subcontracts.
 - (1) Unless otherwise directed by the Contracting Officer, the Contractor shall include the clause at 48 CFR 952.227-11, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed by a small business firm or nonprofit organization, except where the work of the subcontract is subject to an Exceptional Circumstances Determination by DOE. For subcontracts with domestic entities that do not qualify as a small business firm or nonprofit organization, regardless of tier, for experimental, developmental, demonstration or research work, the Contractor shall inset this clause (suitably modified to identify the parties). For foreign subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work, the Contractor shall include the patent rights clause at 48 CFR 952.227-13 (suitably modified to identify the parties).
 - (2) The Contractor shall not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.
 - (3) In the case of subcontractors at any tier, the Department, the subcontractor, and Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the Department with respect to those matters covered by this clause.
- (h) Reporting on utilization of subject inventions.

The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor and any of its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceedings undertaken by DOE in accordance with paragraph (j) of this clause. To the extent data or information supplied under this paragraph is considered by the Contractor, its

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licensee or assignee to be privileged and confidential and is so marked, DOE agrees that, to the extent permitted by law, it shall not disclose such information to persons outside the Government.

(i) Preference for United States industry.

Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the United States unless such person agrees that any products embodying the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in rights.

The Contractor agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with the procedures in 48 CFR 27.304-1(g) to require the Contractor, an assignee, or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that--

- (1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;
- (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;
- (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees;
or
- (4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Background Patents.

(1) The Contractor agrees:

- (i) to grant to the Government a royalty-free, nonexclusive license under any Background Patent for purposes of practicing a subject of this contract by or for the Government in research, development, and demonstration work only.
- (ii) that, upon written application by DOE, it will grant to responsible parties for purposes of practicing a subject of this contract, nonexclusive licenses under any Background

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Patent on terms that are reasonable under the circumstances. If, however, the Contractor believes that exclusive or partially exclusive rights are necessary to achieve expeditious commercial development or utilization, then a request may be made to DOE for DOE approval of such licensing by the Contractor.

- (2) Notwithstanding paragraph (k)(1)(ii), the Contractor shall not be obligated to license any Background Patent if the Contractor demonstrates to the satisfaction of the Secretary or his designee that:
 - (i) a competitive alternative to the subject matter covered by said Background Patent is commercially available from one or more other sources; or
 - (ii) the Contractor or its licensees are supplying the subject matter covered by said Background Patent in sufficient quantity and at reasonable prices to satisfy market needs, or have taken effective steps or within a reasonable time are expected to take effective steps to so supply the subject matter.

(l) Communications.

All reports and notifications required by this clause shall be submitted to the Patent Counsel unless otherwise instructed.

(m) Other inventions.

Nothing contained in this clause shall be deemed to grant to the Government any rights with respect to any invention other than a subject invention, except with respect to Background Patents, above.

(n) Examination of records relating to inventions.

- (1) The Contracting Officer or any authorized representative shall, until 3 years after final payment under this contract, have the right to examine any books (including laboratory notebooks), records, and documents of the Contractor relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this contract to determine whether--
 - (i) Any such inventions are subject inventions;
 - (ii) The Contractor has established and maintains the procedures required by paragraphs (f)(2) and (f)(3) of this clause; and
 - (iii) The Contractor and its inventors have complied with the procedures.
- (2) If the Contracting Officer determines that an inventor has not disclosed a subject invention to the Contractor in accordance with the procedures required by paragraph (f)(5) of this clause, the Contracting Officer may, within 60 days after the determination, request title in accordance with paragraphs (d)(2) and (d)(3) of this clause. However, if the Contractor

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establishes that the failure to disclose did not result from the Contractor's fault or negligence, the Contracting Officer shall not request title.

- (3) If the Contracting Officer learns of an unreported Contractor invention which the Contracting Officer believes may be a subject invention, the Contractor may be required to disclose the invention to DOE for a determination of ownership rights.
- (4) Any examination of records under this paragraph shall be conducted in such a manner as to protect the confidentiality of the information involved.

(o) Withholding of payment.

NOTE: This paragraph does not apply to subcontracts or grants.

- (1) Any time before final payment under this contract, the Contracting Officer may, in the Government's interest, withhold payment until a reserve not exceeding \$50,000 or 5 percent of the amount of the contract, whichever is less, shall have been set aside if, in the Contracting Officer's opinion, the Contractor fails to--
 - (i) Establish, maintain, and follow effective procedures for identifying and disclosing subject inventions pursuant to subparagraph (f)(5) of this clause;
 - (ii) Disclose any subject invention pursuant to subparagraph (c)(1) above;
 - (iii) Deliver acceptable interim reports pursuant to subdivision (f)(7)(i) above; or
 - (iv) Provide the information regarding subcontracts pursuant to subparagraph (f)(8) of this clause.
 - (v) Convey to the Government, using a DOE-approved form, the title and/or rights of the Government in each subject invention as required by this clause.
- (2) Such reserve or balance shall be withheld until the Contracting Officer has determined that the Contractor has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause.
- (3) Final payment under this contract shall not be made before the Contractor delivers to the Patent Counsel all disclosures of subject inventions required by paragraph (c)(1) of this clause, an acceptable final report pursuant to paragraph (f)(7)(ii) of this clause, and all past due confirmatory instruments, and the Patent Counsel has issued a patent clearance certification to the Contracting Officer.
- (4) The Contracting Officer may decrease or increase the sums withheld up to the maximum authorized above. No amount shall be withheld under this paragraph while the amount specified by this paragraph is being withheld under other provisions of the contract. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(p) Waiver Terminations.

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Any waiver granted to the Contractor authorizing the use of this clause (including any retention of rights pursuant thereto by the Contractor under paragraph (b) of this clause) may be terminated at the discretion of the Secretary or his designee in whole or in part, if the request for waiver by the Contractor is found to contain false material statements or nondisclosure of material facts, and such were specifically relied upon by DOE in reaching the waiver determination. Prior to any such termination, the Contractor will be given written notice stating the extent of such proposed termination and the reasons therefor, and a period of 30 days, or such longer period as the Secretary or his designee shall determine for good cause shown in writing, to show cause why the waiver of rights should not be so terminated. Any waiver termination shall be subject to the Contractor's minimum license as provided in paragraph (e) of this clause.

(q) Atomic Energy.

No claim for pecuniary award or compensation under the provisions of the Atomic Energy Act of 1954, as amended, shall be asserted by the Contractor or its employees with respect to any invention or discovery made or conceived in the course of or under this contract.

(r) Publication.

It is recognized that during the course of work under this contract, the Contractor or its employees may from time to time desire to release or publish information regarding scientific or technical developments conceived or first actually reduced to practice in the course of or under this contract. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the Contractor, approval for release of publication shall be secured from Patent Counsel prior to any such release or publication. In appropriate circumstances, and after consultation with the Contractor, Patent Counsel may waive the right of prepublication review.

(s) Forfeiture of rights in unreported subject inventions.

(1) The Contractor shall forfeit and assign to the Government, at the request of the Secretary of Energy or designee, all rights in any subject invention which the Contractor fails to report to Patent Counsel within six months after the time the Contractor:

- (i) Files or causes to be filed a United States or foreign patent application thereon; or
- (ii) Submits the final report required by paragraph (e)(2)(ii) of this clause, whichever is later.

(2) However, the Contractor shall not forfeit rights in a subject invention if, within the time specified in paragraph (m)(1) of this clause, the Contractor:

- (i) Prepares a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the contract and delivers the decision to Patent Counsel, with a copy to the Contracting Officer; or
- (ii) Contending that the subject invention is not a subject invention, the Contractor nevertheless discloses the subject invention and all facts pertinent to this contention to the Patent

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Counsel, with a copy to the Contracting Officer, or

(iii) Establishes that the failure to disclose did not result from the Contractor's fault or negligence.

(3) Pending written assignment of the patent application and patents on a subject invention determined by the Contracting Officer to be forfeited (such determination to be a Final Decision under the Disputes clause of this contract), the contractor shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this paragraph shall be in addition to and shall not supersede any other rights and remedies which the Government may have with respect to subject inventions.

(t) U.S. Competitiveness

The waiver recipient 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 waiver recipient can show to the satisfaction of DOE that it is not commercially feasible to do so. The waiver recipient further agrees to make the above condition binding on any assignee or licensee or any entity otherwise acquiring rights to any waived invention, including subsequent assignees or licensees.

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APPENDIX B

FAR 52.227-14 Rights in Data-General (Dec 2007) (modified)

(c) Copyright.

(1) Data first produced in the performance of this contract.

- (i) Unless provided otherwise in paragraph (d) of this clause, the Contractor may establish, without prior approval of the Contracting Officer, claim to copyright subsisting in scientific and technical articles based on or containing data (Published Data) first produced in the performance of this contract and published in academic, technical or professional journals, symposia proceedings or similar works. For the published data, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted Published Data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government.
- (ii) When authorized to assert copyright to the data, the Contractor shall affix the applicable copyright notices of [17 U.S.C. 401 or 402](#), and an acknowledgment of Government sponsorship (including contract number).
- (iii) The Contractor may establish, without prior approval of the Contracting Officer, claim to copyright subsisting in Computer Software first produced in the performance of this contract. For Computer Software, the Contractor grants to the Government and others acting in its behalf during the period of Contractor's commercialization of the software, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted Computer Software to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government. The Contractor will provide an Announcement Notice, AN 241.4 Software Announcement Notice, along with providing the source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the Computer Software to DOE's Energy Science and Technology Software Center (ESTSC) via www.osti.gov/estsc.
- (iv) The Contractor may establish, without prior approval of the Contracting Officer, claim to copyright subsisting in all Other Data, which is data first produced in the performance of this contract that is neither Computer Software nor Published Data. For such Other Data, the Contractor grants to the Government and others acting in its behalf, a paid-up nonexclusive, irrevocable worldwide license in such copyrighted non-published data to reproduce, prepare derivative works, and perform publicly and display publicly by or on behalf of the Government.
- (v) After the time period set forth below in (d)(3) for Other Data or when he Contractor abandons commercialization of Computer Software, or if, prior to the

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end of such periods, the contractor has not taken effective steps to commercialize the software, or where it is necessary to alleviate health, safety or energy needs that are not reasonably satisfied by the Contractor, or to meet requirements for public use specified by Federal Regulations and these requirements are not reasonably satisfied by the Contractor, the Contractor grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable worldwide license in such copyrighted software to reproduce, distribute copies to the public, prepare derivative works, perform publicly and display publicly, and to permit others to do so.

- (2) Data not first produced in the performance of this contract. The Contractor shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this contract any data not first produced in the performance of this contract unless the Contractor—
 - (i) identifies such data; and
 - (ii) grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause, or if such data are restricted computer software, the Government shall acquire a copyright license as set forth in paragraph (g)(4) of this clause (if included in this contract) or as otherwise provided in a collateral agreement incorporated in or made part of this contract.
 - (3) Removal of copyright notices. The Government will not remove any authorized copyright notices placed on data pursuant to this paragraph (c), and will include such notices on all reproductions of the data.
- (d) Release, publication and use of data.
- (1) The Contractor shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of this contract, except—
 - (i) As prohibited by Federal law or regulation (*e.g.*, export control or national security laws or regulations);
 - (ii) As expressly set forth in this contract; or
 - (iii) If the Contractor receives or is given access to data necessary for the performance of this contract that contain restrictive markings, the Contractor shall treat the data in accordance with such markings unless specifically authorized otherwise in writing by the Contracting Officer.
 - (2) The Contractor shall promptly deliver to the Contracting Officer or to the DOE Patent Counsel designated by the Contracting Officer a duly executed and approved instrument fully confirmatory of all rights to which the Government is entitled, and other terms pertaining to the Computer Software to which claim to copyright is made.
 - (3) For Other Data that is copyrighted in subparagraph (c)(1)(iv) above, the Government will have the right to provide to third parties such Other Data delivered to the Government in performance of this contract after five years from the date that such data is first

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produced. The Government shall have the right to provide Other Data to third parties sooner provided that such data (1) are generally known or available from other sources without obligation concerning its confidentiality, (2) have been made available by the owner to others without obligation concerning its confidentiality, or (3) are otherwise already available to the Government without obligation concerning its confidentiality. Interim disclosure or use also may be made for the following purposes:

- (i) As required for evaluation by PathForward Program personnel at DOE/NNSA and DOE/NNSA Laboratories;
- (ii) As required to support the Advanced Scientific Computing Research (ASCR) and Advanced Simulation and Computing (ASC) Program objectives;
- (iii) As required to respond to a request under the Freedom of Information Act (5 U.S.C. 552), and other applicable laws or regulations, if any;
- (iv) As required to meet the Government's obligations under international agreements and treaties;
- (v) As required to commercialize the data if the Contractor has not taken effective steps to do so;
- (vi) As required to alleviate health, safety or energy needs that are not reasonably satisfied by the Contractor; and
- (vii) As required to meet requirements for public use specified by Federal Regulations and these requirements are not reasonably satisfied by the Contractor.