

**1 AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

1. CONTRACT ID CODE

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2. AMENDMENT/MODIFICATION NO. <b>0114</b>	3. EFFECTIVE DATE <b>See Block 16C</b>	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY <b>U.S. Department of Energy Brookhaven Site Office 53 Bell Avenue, Building 464 Upton, NY 11973-5000</b>	CODE <b>06005</b>	7. ADMINISTERED BY (If other than Item 6) Code	<b>06005</b>

8. NAME AND ADDRESS OF CONTRACTOR (No. street, county, State and ZIP Code)  <b>Brookhaven Science Associates, LLC Attn: Brian Boyle Brookhaven National Laboratory Building 460, PO Box 5000 Upton, New York 11973-5000</b>	(✓)	9. A. AMENDMENT OF SOLICITATION NO.
		9. B. DATED (SEE ITEM 11)
	X	10. A. MODIFICATION OF Contract/Order NO. <b>DE-SC0012704</b>
CODE N/A	FACILITY CODE N/A	10. B. DATED (SEE ITEM 13) <b>12/22/2014</b>

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

**12. ACCOUNTING AND APPROPRIATION DATA (If required)**

N/A

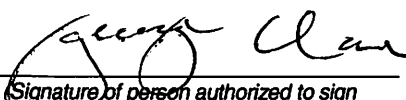

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: <b>Mutual agreement of the parties</b>
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not  is required to sign this document and return 1 copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section heading, including solicitation/contract subject matter where feasible.)**

This Modification is issued to revise Part II, Section I – Contract Clauses, TOC; update clauses I.18, I.130, I.139, I.140, and I.141; delete clauses I.92, I.115, I.121, and I.133; revise Part III, Section J – List of Documents, Exhibits, Attachments, TOC; replace Appendix I – DOE Directives/List B.

15A. NAME AND TITLE OF SIGNER (Type or print) <b>George Clark Chief Financial Officer</b>	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) <b>David R. Mitchell Contracting Officer</b>
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED <b>4/25/18</b>
16B. UNITED STATES OF AMERICA	16C. DATE SIGNED <b>4/26/18</b>
 (Signature of person authorized to sign)	 (Signature of Contracting Officer)

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	DE-SC0012704/0114	2	3

14. Description of Amendment/Modification (continued):

1. **Part II, Section I – Contract Clauses, Table of Contents (TOC):** Section I TOC is revised to update clauses I.18, I.130, I.139, I.140, and I.141 and delete clauses I.92, I.115, I.121, and I.133.

The following clauses have been revised; replace the prior version with the updated attachment provided herein:

- a. **Clause I.18 – FAR 52.208-8, Required Sources for Helium and Helium Usage Data (Apr 2014) (SC ALTERNATE):** This clause is revised IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018.
- b. **Clause I.130 – DEAR 970.5222-2, Overtime Management (Dec 2000) (SC ALTERNATE):** This clause is revised IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018.
- c. **Clause I.139 – DEAR 970.5227-3, Technology Transfer Mission (Aug 2002) (Alternate I) (SC ALTERNATE):** This clause is revised IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018.
- d. **Clause I.140 – DEAR 970.5227-4, Authorization and Consent (Aug 2002) (SC ALTERNATE):** This clause is revised IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018.
- e. **Clause I.141 – DEAR 970.5227-5, Notice and Assistance Regarding Patent and Copyright Infringement (Aug 2002) (SC ALTERNATE):** This clause is revised IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018.

The following clauses have been deleted:

- a. **Clause I.92 – FAR 52.247-67, Submission of Transportation Documents for Audit (Feb 2006):** This clause is hereby deleted from the Contract IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018. Clause I.92 is now titled, “RESERVED”.
  - b. **Clause I.115 – DEAR 952.247-70, Foreign Travel (Jun 2010):** This clause is hereby deleted from the Contract IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018. Clause I.115 is now titled, “RESERVED”.
  - c. **Clause I.121 – DEAR 970.5204-1, Counterintelligence (Dec 2010):** This clause is hereby deleted from the Contract IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018. Clause I.92 is now titled, “RESERVED”.
  - d. **Clause I.133 – DEAR 970.5223-6, Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management (Oct 2010):** This clause is hereby deleted from the Contract IAW Head of the Contracting Activity Office of Science Revolutionary Working Group approved alternates/deviations dated April 2, 2018. Clause I.133 is now titled, “RESERVED”.
2. **Part III, Section J – List of Documents, Exhibits, Attachments, Table of Contents (TOC):** Section J TOC is revised to reflect the following: Replace Appendix I – DOE Directives/List B.
- a. **Appendix I – DOE Directives/List** identified as Modification No. 0110 has been revised; replace the prior version with the attached Appendix I identified as Modification No. 0114. The revisions are as follows:

## SUMMARY OF DIRECTIVE CHANGES

ORDER	TITLE	CHANGE	NOTES
O 350.1 Chg. 6 (Min.Chg.)	Contractor Human Resource Management Programs	Update to latest version	Supersedes DOE O 350.1 Chg. 5
P 411.2A	DOE Scientific Integrity Policy	Add	Directly references DOE laboratories

**Attachments:**

- Part II, Section I – Contract Clauses
  - ❖ I.18
  - ❖ I.130
  - ❖ I.139
  - ❖ I.140
  - ❖ I.141
  
- Part III, Section J – List of Documents, Exhibits, Attachments
  - ❖ Appendix I – DOE Directives/List B

**CLAUSE I.18 - FAR 52.208-8 - REQUIRED SOURCES FOR HELIUM AND HELIUM USAGE (Apr 2014) (SC ALTERNATE) (Apr 2018)**

(a) Definitions.

“Bureau of Land Management,” as used in this clause, means the Department of the Interior, Bureau of Land Management, Amarillo Field Office, Helium Operations, located at 801 South Fillmore Street, Suite 500, Amarillo, TX 79101-3545.

“Federal helium supplier” means a private helium vendor that has an in-kind crude helium sales contract with the Bureau of Land Management (BLM) and that is on the BLM Amarillo Field Office’s Authorized List of Federal Helium Suppliers available via the Internet at [http://www.blm.gov/nm/st/en/fo/Amarillo\\_Field\\_Office.html](http://www.blm.gov/nm/st/en/fo/Amarillo_Field_Office.html).

“Major helium requirement” means an estimated refined helium requirement greater than 200,000 standard cubic feet (scf) (measured at 14.7 pounds per square inch absolute pressure and 70 degrees Fahrenheit temperature) of gaseous helium or 7510 liters of liquid helium delivered to a helium use location per year.

(b) Requirements --

- (1) Contractors must purchase major helium requirements from Federal helium suppliers, to the extent that supplies are available.
- (2) The Contractor shall provide a consolidated report of the following data to the Bureau of Land Management with a copy to the Contracting Officer within 45 days of the close of each fiscal quarter --
  - (i) The name of the supplier;
  - (ii) The amount of helium purchased;
  - (iii) The delivery date(s); and
  - (iv) The location where the helium was used.

(c) *Subcontracts* --The Contractor shall insert this clause, including this paragraph (c), in any subcontract or order that involves a major helium requirement.

**CLAUSE I.130 – DEAR 970.5222-2 – OVERTIME MANAGEMENT (DEC 2000) (SC  
ALTERNATE) (Apr 2018)**

- (a) The Contractor shall maintain adequate internal controls to ensure that employee overtime is authorized only if cost effective and necessary to ensure performance of work under this contract. The Contractor shall adhere to the principles of FAR 22.103-1 in managing overtime use. The Contractor shall, for example, only use overtime when lower overall cost to the Government will result or when it is necessary to meet urgent program needs.
- (b) The Contractor shall notify the Contracting Officer when in any given year it is likely that overtime usage as a percentage of payroll may exceed 4%.
- (c) The Contracting Officer may require the submission, for approval, of a formal annual overtime control plan whenever Contractor overtime usage as a percentage of payroll has exceeded, or is likely to exceed 4%.

**CLAUSE I.139 – DEAR 970.5227-3 – TECHNOLOGY TRANSFER MISSION  
(AUG 2002) (SC ALTERNATE 1) (Apr 2018)**

This clause has as its purpose implementation of the National Competitiveness Technology Transfer Act of 1989 (Sections 3131, 3132, 3133, and 3157 of Pub. L. 101-189 and as amended by Pub. L. 103-160, Sections 3134 and 3160). The Contractor shall conduct technology transfer activities with a purpose of providing benefit from Federal research to U.S. industrial competitiveness.

(a) *Authority.*

- (1) In order to ensure the full use of the results of research and development efforts of, and the capabilities of, the Laboratory, technology transfer, including Cooperative Research and Development Agreements (CRADAs), is established as a mission of the Laboratory consistent with the policy, principles and purposes of Sections 11(a)(1) and 12(g) of the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a); Section 3132(b) of Pub. L. 101-189, Sections 3134 and 3160 of Pub. L. 103-160, and of Chapter 38 of the Patent Laws (35 U.S.C. 200 *et seq.*); Section 152 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2182); Section 9 of the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5908); and Executive Order 12591 of April 10, 1987.
- (2) In pursuing the technology transfer mission, the Contractor is authorized to conduct activities including but not limited to: identifying and protecting Intellectual Property made, created or acquired at or by the Laboratory; negotiating licensing agreements and assignments for Intellectual Property made, created or acquired at or by the Laboratory that the Contractor controls or owns; bailments; negotiating all aspects of and entering into CRADAs; providing technical consulting and personnel exchanges; conducting science education activities and reimbursable Strategic Partnership Projects (SPP); providing information exchanges; and making available laboratory user facilities. It is fully expected that the Contractor shall use all of the mechanisms available to it to accomplish this technology transfer mission, including, but not limited to, CRADAs, user facilities, SPP, science education activities, consulting, personnel exchanges, assignments, and licensing in accordance with this clause.
- (3) *Trademarks and service marks.* The Contractor, with notification to DOE Patent Counsel, is authorized to protect goods/services resulting from work at the Laboratory through Trademark and Service Mark protection. DOE reserves the right to require the Contractor to cancel registration or cease the use of any such mark upon written notice. The Laboratory name, including nicknames, and associated logos are owned by the Department of Energy and shall be protected by DOE Patent Counsel. In furtherance of the technology transfer mission, should the Contractor want to assert trademark or service mark protection for any word, phrase, symbol, design, or combination thereof that includes or is associated with the Laboratory name, the Contractor must first notify the DOE Patent Counsel. All marks resulting

from work at the Laboratory that are not owned by DOE, whether registered with the United States Patent and Trademark Office or not, are subject to paragraph (i) (*Transfer to Successor Contractor*) of this clause, below, unless an exception is allowed by the DOE Patent Counsel.

(b) *Definitions.*

- (1) *Contractor's Laboratory Director* means the individual who has supervision over all or substantially all of the Contractor's operations at the Laboratory.
- (2) *Intellectual Property* means patents, trademarks, copyrights, mask works, protected CRADA information, and other forms of comparable property rights protected by Federal Law and other foreign counterparts.
- (3) *Cooperative Research and Development Agreement (CRADA)* means any agreement entered into between the Contractor as operator of the Laboratory, and one or more parties including at least one non-Federal party under which the Government, through its laboratory, provides personnel, services, facilities, equipment, intellectual property, or other resources with or without reimbursement (but not funds to non-Federal parties) and the non-Federal parties provide funds, personnel, services, facilities, equipment, intellectual property, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the Laboratory; except that such term does not include a procurement contract, grant, or cooperative agreement as those terms are used in sections 6303, 6304, and 6305 of Title 31 of the United States Code.
- (4) *Joint Work Statement (JWS)* means a proposal for a CRADA prepared by the Contractor, signed by the Contractor's Laboratory Director or designee which describes the following: (i) Purpose; (ii) Scope of Work which delineates the rights and responsibilities of the Government, the Contractor and Third Parties, one of which must be a non-Federal party; (iii) Schedule for the work; and (iv) Cost and resource contributions of the parties associated with the work and the schedule.
- (5) *Assignment* means any agreement by which the Contractor transfers ownership of Laboratory Intellectual Property, subject to the Government's retained rights.
- (6) *Laboratory Biological Materials* means biological materials capable of replication or reproduction, such as plasmids, deoxyribonucleic acid molecules, ribonucleic acid molecules, living organisms of any sort and their progeny, including viruses, prokaryote and eukaryote cell lines, transgenic plants and animals, and any derivatives or modifications thereof or products produced through their use or associated biological products, made under this contract by Laboratory employees or through the use of Laboratory research facilities.
- (7) *Laboratory Tangible Research Product* means tangible material results of research which (i) are provided to permit replication, reproduction, evaluation or confirmation of the research effort, or to evaluate its potential commercial utility; (ii) are not materials generally commercially available; and (iii) were made under this contract by Laboratory employees or through the use of Laboratory research facilities.

- (8) *Privately funded technology transfer* means the prosecuting, maintaining, licensing, and marketing of inventions which are not owned by the Government (and not related to CRADAs) when such activities are conducted entirely without the use of Government funds.
- (9) *Bailment* means any agreement in which the Contractor permits the commercial or non-commercial transfer of custody, access or use of Laboratory Biological Materials or Laboratory Tangible Research Product for a specified purpose of technology transfer or research and development, including without limitation evaluation, and without transferring ownership to the bailee.
- (10) *Department of Energy (DOE)*, as used in this clause, includes the National Nuclear Security Administration (NNSA), unless otherwise identified or indicated.
- (11) *Patent Counsel* means the DOE or NNSA Patent counsel assisting the contracting activity. The Patent Counsel is the first and primary point of contact for activities described in this clause.

(c) *Allowable Costs.*

- (1) The Contractor shall establish and carry out its technology transfer efforts through appropriate organizational elements consistent with the requirements for an Office of Research and Technology Applications (ORTA) pursuant to paragraphs (b) and (c) of Section 11 of the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710). The costs associated with the conduct of technology transfer through the ORTA including activities associated with obtaining, maintaining, licensing, and assigning Intellectual Property rights, increasing the potential for the transfer of technology, and the widespread notice of technology transfer opportunities, shall be deemed allowable provided that such costs meet the other requirements of the allowable costs provisions of this Contract.
- (2) The Contractor's participation in litigation to enforce or defend Intellectual Property claims incurred in its technology transfer efforts shall be as provided in the clause entitled "Insurance - Litigation and Claims" of this contract.

(d) *Conflicts of Interest - Technology Transfer.* The Contractor shall have implementing procedures that seek to avoid employee and organizational conflicts of interest, or the appearance of conflicts of interest, in the conduct of its technology transfer activities. These procedures shall apply to other persons participating in Laboratory research or related technology transfer activities. Such implementing procedures shall be provided to the contracting officer for review and approval within sixty (60) days after execution of this contract. The contracting officer shall have thirty (30) days thereafter to approve or require specific changes to such procedures. Such implementing procedures shall include procedures to:

- (1) Require employees with a substantial role in negotiation, approval and performance of the CRADA in paragraph (n) to conform with standards of conduct and integrity in connection with the CRADA activity in accordance with the provisions of paragraph (n)(5) of this clause;



- (2) Review and approve employee activities so as to avoid conflicts of interest arising from commercial utilization activities relating to Contractor-developed Intellectual Property;
  - (3) Conduct work performed using royalties so as to avoid interference with or adverse effects on ongoing DOE projects and programs;
  - (4) Conduct activities relating to commercial utilization of Contractor-developed Intellectual Property so as to avoid interference with or adverse effects on user facility or SPP activities of the Contractor;
  - (5) Conduct DOE-funded projects and programs so as to avoid the appearance of conflicts of interest or actual conflicts of interest with non-Government funded work;
  - (6) Notify the contracting officer with respect to any new work to be performed or proposed to be performed under the Contract for DOE or other Federal agencies where the new work or proposal involves Intellectual Property in which the Contractor has obtained or intends to request or elect title;
  - (7) Except as provided elsewhere in this Contract, obtain the approval of the contracting officer for any licensing of or assignment of title to Intellectual Property rights by the Contractor to any business or corporate affiliate of the Contractor;
  - (8) Obtain the approval of the contracting officer prior to any assignment, exclusive licensing, or option for exclusive licensing, of Intellectual Property to any individual who has been a Laboratory employee within the previous two years or to the company in which the individual is a principal; and
  - (9) Notify non-Federal sponsors of SPP activities, of any relevant Intellectual Property interest of the Contractor prior to execution of SPPs.
  - (10) Notify the Contracting Officer and the funding party or program prior to evaluating a proposal by a third party or a DOE program, when the subject matter of the proposal involves an elected or waived subject invention under this contract or one in which the Contractor intends to elect to retain title under this contract.
- (e) *Fairness of Opportunity.* In conducting its technology transfer activities, the Contractor shall prepare procedures and take all reasonable measures to ensure widespread notice of availability of technologies suited for transfer and opportunities for exclusive licensing and joint research arrangements. The requirement to widely disseminate the availability of technology transfer opportunities does not apply to a specific application originated outside of the Laboratory and by entities other than the Contractor.
- (f) *U.S. Industrial Competitiveness - for licensing and assignments of intellectual property.*
- (1) In the interest of enhancing U.S. Industrial Competitiveness, the Contractor shall, in its licensing and assignments of Intellectual Property, give preference in such a manner as to enhance the accrual of economic and technological benefits to the U.S. domestic economy. The Contractor shall consider the following factors in all of its licensing and assignment decisions involving Laboratory intellectual property where the Laboratory obtains rights during the course of the Contractor's operation of the Laboratory under this contract:

- (i) whether any resulting design and development will be performed in the United States and whether resulting products, embodying parts, including components thereof, will be substantially manufactured in the United States; or
  - (ii) (A) whether the proposed licensee or assignee has a business unit located in the United States and whether significant economic and technical benefits will flow to the United States as a result of the license or assignment agreement; and  
(B) in licensing any entity subject to the control of a foreign company or government, whether such foreign government permits United States agencies, organizations or other persons to enter into cooperative research and development agreements and licensing agreements, and has policies to protect United States Intellectual Property rights; and  
(C) If the proposed licensee, assignee, or parent of either type of entity is subject to the control of a foreign company or government, the Contractor, with the assistance of the Contracting Officer, in considering the factors set forth in paragraph (f)(1)(ii)(B) of this clause, may rely upon the following information—
    - (1) U.S. Trade Representative inventory of Foreign Trade Barriers;
    - (2) U.S. Trade Representative Special 301 Report; and
    - (3) Such other relevant information available to the Contracting Officer;and  
(D) The Contractor shall review the U.S. Trade Representative Web site at: <http://www.ustr.gov> for the most current versions of these reports and other relevant information. The Contractor is encouraged to utilize other available resources, as necessary, to allow for a complete and informed decision.
- (2) If the Contractor determines that neither of the conditions in paragraphs (f)(1)(i) or (ii) of this clause are likely to be fulfilled, the Contractor, prior to entering into such an agreement, must obtain the approval of the contracting officer. The contracting officer shall act on any such requests for approval within thirty (30) days.
- (3) The Contractor agrees to be bound by the provisions of 35 U.S.C. 204 (Preference for United States industry).
- (g) *Indemnity - Product Liability.* In entering into written technology transfer agreements, including but not limited to, research and development agreements, licenses, assignments and CRADAs, the Contractor agrees to include in such agreements a requirement that the U.S. Government and the Contractor, except for any negligent acts or omissions of the Contractor, be indemnified for all damages, costs, and expenses, including attorneys' fees, arising from personal injury or property damage occurring as a result of the making, using or selling of a product, process or service by or on behalf of the Participant, its assignees or licensees which was derived from the work performed under the agreement. Except for CRADA and SPP where the

guidance is already provided elsewhere, the Contractor shall identify and obtain the approval of the contracting officer for any proposed exceptions to this requirement such as where State or local law expressly prohibit the Participant from providing indemnification or where the research results will be placed in the public domain.

(h) *Disposition of Income.*

- (1) Royalties or other income earned or retained by the Contractor as a result of performance of authorized technology transfer activities herein shall be used by the Contractor for scientific research, development, technology transfer, and education at the Laboratory, consistent with the research and development mission and objectives of the Laboratory and subject to Section 12(b)(5) of the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a(b)(5)) and Chapter 38 of the Patent Laws (35 U.S.C. 200 *et seq.*) as amended through the effective date of this contract award or modification. If the net amounts of such royalties and income received from patent licensing after payment of patenting costs, licensing costs, payments to inventors and other expenses incidental to the administration of Subject Inventions during any fiscal year exceed 5 percent of the Laboratory's budget for that fiscal year, 15 percent of such excess amounts shall be paid to the Treasury of the United States, and the remaining amount of such excess shall be used by the Contractor for the purposes as described above in this paragraph. Any inventions arising out of such scientific research and development activities shall be deemed to be Subject Inventions under the Contract.
  - (2) The Contractor shall include as a part of its annual Laboratory Institutional Plan or other such annual document a plan setting out those uses to which royalties and other income received as a result of performance of authorized technology transfer activities herein will be applied at the Laboratory, and at the end of the year, provide a separate accounting for how the funds were actually used. Under no circumstances shall these royalties and income be used for an illegal augmentation of funds furnished by the U.S. Government.
  - (3) The Contractor shall establish subject to the approval of the contracting officer a policy for making awards or sharing of royalties with Contractor employees, other coinventors and coauthors, including Federal employee coinventors when deemed appropriate by the contracting officer. The Contractor shall notify the Contracting Officer of any changes to that policy, and such changes, shall be subject to the approval of the Contracting Officer.
- (i) *Transfer to Successor Contractor.* In the event of termination or upon the expiration of this Contract, any unexpended balance of income received for use at the Laboratory shall be transferred, at the contracting officer's request, to a successor contractor, or in the absence of a successor contractor, to such other entity as designated by the contracting officer. The Contractor shall transfer title, as one or several packages if necessary, to the extent the Contractor retains title, in all patents and patent applications, licenses, accounts containing royalty revenues from such license agreements, including equity positions in third party entities, and other

Intellectual Property rights which arose at the Laboratory, to the successor contractor or to the Government as directed by the contracting officer.

(j) *Technology Transfer Affecting the National Security.*

- (1) The Contractor shall notify and obtain the approval of the contracting officer, prior to entering into any technology transfer arrangement, when such technology or any part of such technology is classified by statute or executive order or controlled under Section 148 of the Atomic Energy Act (42 U.S.C. 2168), as amended, or is subject to export control for nonproliferation and other nuclear-related national security purposes. Such notification shall include sufficient information to enable DOE to determine the extent that commercialization of such technology would enhance or diminish security interests of the United States, or diminish communications within DOE's nuclear weapon production complex. DOE shall use its best efforts to complete its determination within sixty (60) days of the Contractor's notification, and provision of any supporting information, and DOE shall promptly notify the Contractor as to whether the technology is transferable.
- (2) The Contractor shall include in all of its technology transfer agreements with third parties, including, but not limited to, CRADAs, licensing agreements and assignments, notice to such third parties that the export of goods and/or Technical Data from the United States may require some form of export control license or other authority from the U.S. Government and that failure to obtain such export control license may result in criminal liability under U.S. laws.
- (3) For other than fundamental research as defined in National Security Decision Directive 189, the Contractor is responsible to conduct internal export control reviews and assure that technology is transferred in accordance with applicable law.

(k) *Records.* The Contractor shall maintain records of its technology transfer activities in a manner and to the extent satisfactory to the DOE and specifically including, but not limited to, the licensing agreements, assignments and the records required to implement the requirements of paragraphs (e), (f), and (h) of this clause and shall provide reports to the contracting officer to enable DOE to maintain the reporting requirements of Section 12(c)(6) of the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a(c)(6)). Such reports shall be made annually in a format to be agreed upon between the Contractor and DOE and in such a format which will serve to adequately inform DOE of the Contractor's technology transfer activities while protecting any data not subject to disclosure under the Rights in Technical Data clause and paragraph (n) of this clause. Such records shall be made available in accordance with the clauses of this Contract pertaining to inspection, audit and examination of records.

(l) *Reports to Congress.* To facilitate DOE's reporting to Congress, the Contractor is required to submit annually to DOE a technology transfer plan for conducting its technology transfer function for the upcoming year, including plans for securing Intellectual Property rights in Laboratory innovations with commercial promise and plans for managing such innovations so as to benefit the competitiveness of United

States industry. This plan may be included in the Annual Laboratory Plan and provided to the contracting officer on or before October 1st of each year.

- (m) *Oversight and Appraisal.* The Contractor is responsible for developing and implementing effective internal controls for all technology transfer activities consistent with the audit and record requirements of this Contract. Laboratory Contractor performance in implementing the technology transfer mission and the effectiveness of the Contractor's procedures will be evaluated by the contracting officer as part of the annual appraisal process, with input from the cognizant Secretarial Officer or program office.
- (n) *Technology Transfer Through Cooperative Research and Development Agreements.* Upon approval of the contracting officer and as provided in a DOE approved Joint Work Statement (JWS), the Laboratory Director, or designee, may enter into CRADAs on behalf of the DOE subject to the requirements set forth in this paragraph.
  - (1) *Review and Approval of CRADAs.*
    - (i) Except as otherwise directed in writing by the contracting officer, each JWS shall be submitted to the contracting officer for approval. The Contractor's Laboratory Director or designee shall provide a program mission impact statement and shall include an impact statement regarding related Intellectual Property rights known by the Contractor to be owned by the Government to assist the contracting officer in the approval determination.
    - (ii) The Contractor shall also include (specific to the proposed CRADA), a statement of compliance with the Fairness of Opportunity requirements of paragraph (e) of this clause.
    - (iii) Within thirty (30) days after submission of a JWS or proposed CRADA, the contracting officer shall approve, disapprove or request modification to the JWS or CRADA. The contracting officer shall provide a written explanation to the Contractor's Laboratory Director or designee of any disapproval or requirement for modification of a JWS or proposed CRADA.
    - (iv) Except as otherwise directed in writing by the contracting officer, the Contractor shall not enter into, or begin work under, a CRADA until approval of the CRADA has been granted by the contracting officer. The Contractor may submit its proposed CRADA to the contracting officer at the time of submitting its proposed JWS or any time thereafter.
  - (2) *Selection of Participants.* The Contractor's Laboratory Director or designee in deciding what CRADA to enter into shall:
    - (i) Give special consideration to small business firms, and consortia involving small business firms;
    - (ii) Give preference to business units located in the United States which agree that products or processes embodying Intellectual Property will be substantially manufactured or practiced in the United States and, in the case of any industrial organization or other person subject to the control of a foreign company or government, take into consideration whether or not such foreign government permits United States agencies, organizations, or other persons to enter into cooperative research and development agreements

and licensing agreements. The Contractor, in considering these factors, may rely upon the following information:

- (A) U.S. Trade Representative inventory of Foreign Trade Barriers;
  - (B) U.S. Trade Representative Special 301 Report; and
  - (C) Such other relevant information available to the Contracting Officer. The Contractor shall review the U.S. Trade Representative Web site at: <http://www.ustr.gov> for the most current versions of these reports and other relevant information. The Contractor is encouraged to utilize other available resources, as necessary, to allow for a complete and informed decision.
- (iii) Provide Fairness of Opportunity in accordance with the requirements of paragraph (e) of this clause; and
  - (iv) Give consideration to the Conflicts of Interest requirements of paragraph (d) of this clause.
- (3) *Withholding of Data.* (i) Data that is first produced as a result of research and development activities conducted under a CRADA and that would be a trade secret or commercial or financial data that would be privileged or confidential, if such data had been obtained from a non-Federal third party, may be protected from disclosure under the Freedom of Information Act as provided in the Stevenson-Wydler Technology Innovation Act of 1980, as amended (15 U.S.C. 3710a(c)(7)) for a period as agreed in the CRADA of up to five (5) years from the time the data is first produced. The DOE shall cooperate with the Contractor in protecting such data.
- (ii) Unless otherwise expressly approved by the contracting officer in advance for a specific CRADA, the Contractor agrees, at the request of the contracting officer, to transmit such data to other DOE facilities for use by DOE or its Contractors by or on behalf of the Government. When data protected pursuant to paragraph (n)(3)(i) of this clause is so transferred, the Contractor shall clearly mark the data with a legend setting out the restrictions against private use and further dissemination, along with the expiration date of such restrictions. A final report, upon completion of a CRADA, shall be provided to DOE's Office of Scientific and Technical Information; reports marked as Protected CRADA Information will not be released to the public for a period up to five years, in accordance with the terms of the CRADA.
  - (iii) In addition to its authority to license Intellectual Property, the Contractor may enter into licensing agreements with third parties for data developed by the Contractor under a CRADA subject to other provisions of this Contract. However, the Contractor shall neither use the protection against dissemination nor the licensing of data as an alternative to the submittal of invention disclosures which include data protected pursuant to paragraph (n)(3)(i) of this clause.
- (4) *Strategic Partnership Projects and User Facility Programs.* (i) SPP and User Facility Agreements (UFAs) are not CRADAs and will be available for use by the Contractor in addition to CRADAs for achieving utilization of employee expertise and unique facilities for maximizing technology transfer. The Contractor agrees to inform prospective CRADA participants, which are intending to substantially pay full cost recovery for the effort under a proposed

CRADA, of the availability of alternative forms of agreements, *i.e.*, SPP and UFA, and of the Class Patent Waiver provisions associated therewith. (ii) Where the Contractor believes that the transfer of technology to the U.S. domestic economy will benefit from, or other equity considerations dictate, an arrangement other than the Class Waiver of patent rights to the sponsor in SPP and UFAs, a request may be made to the contracting officer for an exception to the Class Waivers. (iii) Rights to inventions made under agreements other than funding agreements with third parties shall be governed by the appropriate provisions incorporated, with DOE approval, in such agreements, and the provisions in such agreements take precedence over any disposition of rights contained in this Contract. Disposition of rights under any such agreement shall be in accordance with any DOE class waiver (including SPP and User Class Waivers) or individually negotiated waiver which applies to the agreement.

- (5) *Conflicts of interest.* (i) Except as provided in paragraph (n)(5)(iii) of this clause, the Contractor shall assure that no employee of the Contractor shall have a substantial role (including an advisory role) in the negotiation, approval or performance of a CRADA, if, to such employee's knowledge:
- (A) Such employee, or the spouse, child, parent, sibling, or partner of such employee, or an organization (other than the Contractor) in which such employee serves as an officer, director, trustee, partner, or employee -
    - (1) Holds financial interest in any entity, other than the Contractor, that has a substantial interest in the negotiation, approval or performance of the CRADA;
    - (2) Receives a gift or gratuity from any entity, other than the Contractor, that has a substantial interest in the negotiation, approval or performance of the CRADA; or
  - (B) A financial interest in any entity, other than the Contractor, that has a substantial interest in the negotiation, approval or performance of the CRADA, is held by any person or organization with whom such employee is negotiating or has any arrangement concerning prospective employment.
- (ii) The Contractor shall require that each employee of the Contractor who has a substantial role (including an advisory role) in the negotiation, approval or performance of a CRADA certify through the Contractor to the contracting officer that the circumstances described in paragraph (n)(5)(i) of this clause do not apply to that employee.
- (iii) The requirements of paragraphs (n)(5)(i) and (n)(5)(ii) of this clause shall not apply in a case where the contracting officer is advised by the Contractor in advance of the participation of an employee described in those paragraphs in the negotiation, approval or performance of a CRADA of the nature of and extent of any financial interest described in paragraph (n)(5)(i) of this clause, and the contracting officer determines that such financial interest is not so substantial as to be considered likely to affect the integrity of the Contractor employee's participation in the process of negotiating, approving or performing the CRADA.

- (o) *Technology Transfer in Other Cost-Sharing Agreements.* In conducting research and development activities in cost-shared agreements not covered by paragraph (n) of

this clause, the Contractor, with prior written permission of the contracting officer, may provide for the withholding of data produced thereunder in accordance with the applicable provisions of paragraph (n)(3) of this clause.

(p) Technology Partnership Ombudsman.

- (1) The Contractor agrees to establish a position to be known as "Technology Partnership Ombudsman," to help resolve complaints from outside organizations regarding the policies and actions of the contractor with respect to technology partnerships (including CRADAs), patents owned by the contractor for inventions made at the laboratory, and technology licensing.
- (2) The Ombudsman shall be a senior official of the Contractor's laboratory staff, who is not involved in day-to-day technology partnerships, patents or technology licensing, or, if appointed from outside the laboratory or facility, shall function as such senior official.
- (3) The duties of the Technology Partnership Ombudsman shall include: (i) Serving as the focal point for assisting the public and industry in resolving complaints and disputes with the laboratory or facility regarding technology partnerships, patents, and technology licensing; (ii) Promoting the use of collaborative alternative dispute resolution techniques such as mediation to facilitate the speedy and low cost resolution of complaints and disputes, when appropriate; and (iii) Submitting a quarterly report, in a format provided by DOE, to the Secretary of Energy, the Administrator for Nuclear Security, the Director of the DOE Office of Dispute Resolution, and the Contracting Officer concerning the number and nature of complaints and disputes raised, along with the Ombudsman's assessment of their resolution, consistent with the protection of confidential and sensitive information.

- (q) Nothing in paragraphs (c) Allowable Costs, (e) Fairness of Opportunity, (f) U.S. Industrial Competitiveness, (g) Indemnity - Product Liability, (h) Disposition of Income, and (i) Transfer to Successor Contractor of this clause are intended to apply to the contractor's privately funded technology transfer activities if such privately funded activities are addressed elsewhere in the contract.



**CLAUSE I.140 – DEAR 970.5227-4 – AUTHORIZATION AND CONSENT (AUG 2002)  
(SC ALTERNATE) (Apr 2018)**

- (a) The Government authorizes and consents to all use and manufacture of any invention described in and covered by a United States patent in the performance of this contract or any subcontract at any tier.
- (b) If the Contractor is sued for copyright infringement or anticipates the filing of such a lawsuit, the Contractor may request authorization and consent to copy a copyrighted work from the contracting officer. Programmatic necessity is a major consideration for DOE in determining whether to grant such request.
- (c)
  - (1) The Contractor agrees to include, and require inclusion of, the Authorization and Consent clause at 52.227-1, without Alternate 1, but suitably modified to identify the parties, in all subcontracts expected to exceed \$100,000 at any tier for supplies or services, including construction, architect-engineer services, and materials, supplies, models, samples, and design or testing services.
  - (2) The Contractor agrees to include, and require inclusion of, paragraph (a) of this Authorization and Consent clause, suitably modified to identify the parties, in all subcontracts at any tier for research and development activities expected to exceed \$100,000.
  - (3) Omission of an authorization and consent clause from any subcontract, including those valued less than the simplified acquisition threshold does not affect this authorization and consent.

**CLAUSE I.141 – DEAR 970.5227-5 – NOTICE AND ASSISTANCE REGARDING  
PATENT AND COPYRIGHT INFRINGEMENT (AUG 2002) (SC  
ALTERNATE) (Apr 2018)**

- (a) The Contractor shall report to the Contracting Officer promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this contract of which the Contractor has knowledge.
- (b) If any person files a claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this contract or out of the use of any supplies furnished or work or services performed hereunder, the Contractor shall furnish to the Government, when requested by the Contracting Officer, all evidence and information in possession of the Contractor pertaining to such suit or claim. Except where the Contractor has agreed to indemnify the Government, the Contractor shall furnish such evidence and information at the expense of the Government.
- (c) The Contractor agrees to include, and require inclusion of, this clause suitably modified to identify the parties, in all subcontracts at any tier expected to exceed the simplified acquisition threshold.

**APPENDIX I**

**DOE Directives/List B**

**Applicable to the Operations of  
Brookhaven National Laboratory**

There is no List A to this Appendix.

List B to this Appendix contains the following:

Part I: "Directives List"

This section contains a list of Directives that are considered by DOE as applicable to the BNL contract.

**Appendix I - Part I  
DOE DIRECTIVES LIST**

DOE Directives may be found at the following address: <http://www.directives.doe.gov>

ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
9/29/1995	Order	130.1		Budget Formulation
9/4/2008	Manual	142.2-1	Admin Chg. 1 6/27/13	Manual for Implementation of the Voluntary Offer Safeguards Agreement and Additional Protocol with the International Atomic Energy Agency
12/15/2006	Order	142.2A	Admin Chg. 1 6/27/13	Voluntary Offer Safeguards Agreement and Additional Protocol with the International Atomic Energy Agency
10/14/2010	Order	142.3A	Chg.1 (Minor Chg.) 01/18/2017	Unclassified Foreign Visits and Assignments Program
3/31/2014	Order	150.1A		Continuity Programs
8/11/2016	Order	151.1D		Comprehensive Emergency Management System
6/27/2007	Order	153.1		Departmental Radiological Emergency Response Assets
12/23/2008	Order	200.1A	Chg.1 (Minor Chg.) 01/13/2017	Information Technology Management
1/7/2005	Order	203.1		Limited Personal Use of Government Office Equipment Including Information Technology
5/16/2011	Order	205.1B	Admin Chg. 3 4/29/14	Department of Energy Cyber Security Program
1/16/2009	Order	206.1		Department of Energy Privacy Program
2/19/2013	Order	206.2		Identity, Credential and Access Management (ICAM)
4/8/2011	Order	210.2A		DOE Corporate Operating Experience Program
9/27/2016	Order	221.1B		Reporting Fraud, Waste, and Abuse to the Office of Inspector General
2/25/2008	Order	221.2A		Cooperation with the Office of Inspector General
3/4/2011	Order	225.1B		Accident Investigations
8/30/2011	Order	227.1A	12/21/2015	Independent Oversight Program
6/27/2011	Order	231.1B	Admin Chg. 1 11/28/12	Environment, Safety and Health Reporting
1/17/2017	Order	232.2A		Occurrence Reporting and Processing of Operations Information
12/13/2010	Order	241.1B	Chg.1 4/26/16	Scientific and Technical Information Management
3/11/2013	Order	243.1B	Admin Chg.1 7/8/13	Records Management Program
2/23/2011	Order	252.1A	Admin Chg. 1 3/12/13	Technical Standards Program
11/19/2009	Order	313.1		Management and Funding of the Department's Overseas Presence

### Appendix I - Part I DOE DIRECTIVES LIST

DOE Directives may be found at the following address: <http://www.directives.doe.gov>

ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
10/18/2007	Order	341.1A Parts: 1.(a- b) 2.a(1-3) 2.a(4)(a- h)		Federal Employee Health Services
2/23/2010	Order	350.1	Chg. 6 (Minor Chg.) 2/1/18	Contractor Human Resource Management Programs
8/17/2009	Order	410.2	Admin Chg. 1 4/10/14	Management of Nuclear Materials
1/4/2017	Order	411.2		Scientific Integrity
1/4/2017	Policy	411.2A		Scientific Integrity Policy
10/28/2008	Order	413.1B		Internal Control Program
4/19/2006	Order	413.2C	10/22/2015	Laboratory Directed Research and Development
11/29/2010	Order	413.3B	Chg. 4 (Minor Chg.) 10/13/17	Program and Project Management for the Acquisition of Capital Assets
4/25/2011	Order	414.1D	Admin Chg. 1 5/8/13	Quality Assurance
12/3/2012	Order	415.1	Chg.2 (Minor Chg.) 1/17/2017	Information Technology Project Management
12/4/2012	Order	420.1C	Chg.1 2/27/15	Facility Safety <b>Compliance Note:</b> Chapters 1, 3, and 5 are applicable to BNL facilities categorized as hazardous category 1, 2, or 3 nuclear facility is proposed by BNL and approved by DOE
7/21/2011	Order	420.2C		Safety of Accelerator Facilities
6/29/2010	Order	422.1	Admin Chg. 1 6/25/13	Conduct of Operations <b>Compliance Note:</b> Applicable to Hazardous Category 1, 2, or 3 nuclear facilities and other facilities as defined by BSA in a Program Plan to be approved by BHSO for incorporating
11/25/2016	Policy	434.1B		Conduct and Approval of Select Agent and Toxin Work at Department of Energy Sites
7/9/1999	Order	435.1	Admin Chg. 1 8/28/01	Radioactive Waste Management
7/9/1999	Manual	435.1-1	Admin Chg. 1 6/19/01	Radioactive Waste Management Manual
5/2/2011	Order	436.1		Departmental Sustainability

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ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
11/27/2002	Order	440.2C	Admin Chg. 1 6/22/11	Aviation Management and Safety
3/7/2008	Manual	441.1-1	Chg. 1 (Admin Chg.) 02/24/16	Nuclear Material Packaging Manual
6/6/2001	Order	442.1A		Department of Energy Employee Concerns Program
7/29/2011	Order	442.2	Chg.1 (Pg.Chg.) 10/4/2016	Differing Professional Opinions for Technical Issues Involving Environment, Safety and Health
3/7/2011	Order	443.1B	Chg. 1 (Pg.Chg.) 4/21/16	Protection of Human Research Subjects
7/21/2011	Order	452.8		Control of Nuclear Weapon Data
7/15/2016	Order	456.1A		The Safe Handling of Unbound Engineered Nanoparticles
2/11/2011	Order	458.1	Admin Chg. 3 1/15/13	Radiation Protection of the Public and the Environment
12/20/2016	Order	460.1D		Hazardous Materials Packaging and Transportation Safety
12/22/2004	Order	460.2A		Departmental Material Transportation and Packaging Management
6/4/2008	Manual	460.2-1A		Radioactive Material Transportation Practices Manual
11/23/2016	Order	470.3C		Design Basis Threat (DBT) Order
7/21/2011	Order	470.4B	Chg.2 (Minor Chg.) 1/17/2017	Safeguards and Security Program
6/2/2014	Order	470.5		Insider Threat Program
9/2/2015	Order	470.6	Chg.1 (Minor Chg.1) 1-11-2017	Technical Security Program
3/1/2010	Order	471.1B		Identification and Protection of Unclassified Controlled Nuclear Information
4/9/2003	Order	471.3	Admin Chg. 1 1/13/11	Identifying and Protecting Official Use Only Information
4/9/2003	Manual	471.3-1	Admin Chg. 1 1/13/11	Manual for Identifying and Protecting Official Use Only Information
6/20/2011	Order	471.6	Admin Chg. 2 5/15/15	Information Security
7/27/2011	Order	472.2	Admin Chg. 1 10/8/13	Personnel Security

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DOE DIRECTIVES LIST**

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ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
1/2/2018	Order	473.3A	Chg.1 (Minor Chg.) 1/2/2018	Protection Program Operations
6/27/2011	Order	474.2	Chg. 4 (Pg.Chg.) 9/13/2016	Nuclear Material Control and Accountability
12/10/2004	Order	475.1		Counterintelligence Program
10/3/2014	Order	475.2B		Identifying Classified Information
1/3/2001	Manual	481.1-1A	Admin Chg. 1 9/28/01	Reimbursable Work for Non Federal Sponsored Process Manual
12/20/2016	Order	483.1B		DOE Cooperative Research and Development Agreements
8/17/2006	Order	484.1	Admin Chg. 2 6/30/14	Reimbursable Work for the Department of Homeland Security
1/19/2017	Policy	485.1		Foreign Engagements with DOE National Laboratories
11/3/2004	Order	522.1		Pricing of Departmental Materials and Services
1/6/2003	Order	534.1B		Accounting
4/2/2012	Order	551.1D	Chg. 2 (Minor Chg.) 8/11/16	Official Foreign Travel