

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE PAGE OF PAGES
1 3

2. AMENDMENT/MODIFICATION NO. 0051
3. EFFECTIVE DATE See Block 16C
4. REQUISITION/PURCHASE REQ. NO.
5. PROJECT NO. (If applicable)

6. ISSUED BY CODE 06005
7. ADMINISTERED BY (If other than Item 6) Code 06005

U.S. Department of Energy
Brookhaven Site Office
53 Bell Avenue, Building 464
Upton, NY 11973-5000

8. NAME AND ADDRESS OF CONTRACTOR (No. street, county, State and ZIP Code) (✓)
9. A. AMENDMENT OF SOLICITATION NO.

Brookhaven Science Associates, LLC
Attn: Brian Boyle
Brookhaven National Laboratory
Building 460, PO Box 5000
Upton, New York 11973-5000

9. B. DATED (SEE ITEM 11)

10. A. MODIFICATION OF Contract/Order NO.

DE-SC0012704

10. B. DATED (SEE ITEM 13)

12/22/2014

CODE N/A FACILITY CODE N/A

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:
Mutual agreement of the parties
- 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.46, I.51, I.56, I.57, I.88; Add clauses I.17A, I.62A, and I.62B; 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) George Clark Chief Financial Officer
16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Evelyn Landini Contracting Officer

15B. CONTRACTOR/OFFEROR 15C. DATE SIGNED 8/5/16
16B. UNITED STATES OF AMERICA 16C. DATE SIGNED 8/10/16


(Signature of person authorized to sign)

BY  8/10/16
(Signature of Contracting Officer)

14. Description of Amendment/Modification (continued):

1. **Part II, Section I – Contract Clauses, Table of Contents (TOC):** Section I is revised to reflect an update to clauses I.46, I.51, I.56, I.57, and I.88. Add clauses I.17A, I.62A, and I.62B.

2. **Part II, Section I – Contract Clauses:**

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

- a. Clause I.46 - FAR 52.222-37, Employment Reports on Veterans (Feb 2016): This clause has been updated to correct an error contained in the language of paragraph (b)(2) to be consistent with the Federal Register. The previous language of the clause was from an earlier version of the FAR that was not consistent with the Federal Register version.
- b. Clause I.51 - FAR 52.223-3, Hazardous Material Identification And Material Safety Data (Jan 1997) (Alternate I) (Jul 1995): This clause has been revised to updated the table in paragraph (b).
- c. Clause I.56 – FAR 52.223-11, Ozone-Depleting Substances and High Global Warming Potential Hydrofluorocarbons (Jun 2016): This clause has been updated IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.
- d. Clause I.57 – FAR 52.223-12, Maintenance, Service, Repair, or Disposal of Refrigeration Equipment and Air Conditioners (Jun 2016): This clause has been updated IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.
- e. Clause I.88 - FAR 52.244-6, Subcontracts for Commercial Items (Jun 2016): This clause has been updated IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.

The following clauses have been added to the contract; insert the attachments provided herein:

- f. Clause I.17A – FAR 52.204-21, Basic Safeguarding of Covered Contractor Information Systems (Jun 2016): This clause is hereby added to the contract IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.
- g. Clause I.62A – FAR 52.223-20, Aerosols (Jun 2016): This clause is hereby added to the contract IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.
- h. Clause I.62B – FAR 52.223-21, Foams (Jun 2016): This clause is hereby added to the contract IAW Policy Flash 2016-26, Federal Register at 81 FR 30428, Federal Acquisition Circular (FAC) 2005-88, and FAR Case 2014-026.

3. **Part III, Section J – List of Documents, Exhibits, Attachments:** Section J is revised to reflect the following: Replace Appendix I – DOE Directives/List B.

- a. **Appendix I – DOE Directives/List** identified as Modification No. 0042 has been revised; replace the prior version with the attached Appendix I identified as Modification No. 0051. The revisions are as follows:

SUMMARY OF DIRECTIVE CHANGES			
ADDITIONS	TITLE	CHANGE	NOTES
O 241.1B, Chg. 1 (Admin Change)	Scientific and Technical Information Management	Updated to the latest revision	Cancels and replaces O 241.1A
N 251.115	Cancellation of Order 350.2B, Use of Management and Operating (M&O) or other Facility Management Contractor Employee for Services to DOE in the Washington, D.C. Area	Removed from the contract	Cancels O 350.2B

SUMMARY OF DIRECTIVE CHANGES

ADDITIONS	TITLE	CHANGE	NOTES
O 413.3B Chg. 1 (Pg. Chg.)	Program and Project Management for the Acquisition of Capital Assets	Updated to the latest revision	Directive 413.3B was issues without any number in the title or as final. Therefore chg. 1 is hereby annotated.
O 413.3B Chg. 2 (Pg. Chg.)	Program and Project Management for the Acquisition of Capital Assets	Updated to the latest revision	Cancels and replaces O 413.3B Chg. 1 (Pg. Chg.)
O 420.1C, Chg. 1	Facility Safety	Updated to the latest revision	Cancels and replaces O 420.1C
O 443.1B, Chg. 1 (Pg. Chg.)	Protection of Human Research Subjects	Updated to the latest revision	Supersedes O 443.1B
O 473.3A	Protection Program Operations	Updated to the latest revision	Cancels O 473.3

Attachments:

- Part II, Section I – Contract Clauses
 - ❖ I.17A, I.46, I.51, I.56, I.57, I.62A, I.62B, I.88
- Part III, Section J – List of Documents, Exhibits, Attachments
 - ❖ Appendix I – DOE Directives/List

**CLAUSE I.17A – 52.204-21 – BASIC SAFEGUARDING OF COVERED
CONTRACTOR INFORMATION SYSTEMS (JUN 2016)**

(a) *Definitions.* As used in this clause--

“Covered contractor information system” means an information system that is owned or operated by a contractor that processes, stores, or transmits Federal contract information.

“Federal contract information” means information, not intended for public release, that is provided by or generated for the Government under a contract to develop or deliver a product or service to the Government, but not including information provided by the Government to the public (such as on public Web sites) or simple transactional information, such as necessary to process payments.

“Information” means any communication or representation of knowledge such as facts, data, or opinions, in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual (Committee on National Security Systems Instruction (CNSSI) 4009).

“Information system” means a discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information (44 U.S.C. 3502).

“Safeguarding” means measures or controls that are prescribed to protect information systems.

(b) Safeguarding requirements and procedures.

(1) The Contractor shall apply the following basic safeguarding requirements and procedures to protect covered contractor information systems. Requirements and procedures for basic safeguarding of covered contractor information systems shall include, at a minimum, the following security controls:

(i) Limit information system access to authorized users, processes acting on behalf of authorized users, or devices (including other information systems).

(ii) Limit information system access to the types of transactions and functions that authorized users are permitted to execute.

(iii) Verify and control/limit connections to and use of external information systems.

- (iv) Control information posted or processed on publicly accessible information systems.
- (v) Identify information system users, processes acting on behalf of users, or devices.
- (vi) Authenticate (or verify) the identities of those users, processes, or devices, as a prerequisite to allowing access to organizational information systems.
- (vii) Sanitize or destroy information system media containing Federal Contract Information before disposal or release for reuse.
- (viii) Limit physical access to organizational information systems, equipment, and the respective operating environments to authorized individuals.
- (ix) Escort visitors and monitor visitor activity; maintain audit logs of physical access; and control and manage physical access devices.
- (x) Monitor, control, and protect organizational communications (i.e., information transmitted or received by organizational information systems) at the external boundaries and key internal boundaries of the information systems.
- (xi) Implement subnetworks for publicly accessible system components that are physically or logically separated from internal networks.
- (xii) Identify, report, and correct information and information system flaws in a timely manner.
- (xiii) Provide protection from malicious code at appropriate locations within organizational information systems.
- (xiv) Update malicious code protection mechanisms when new releases are available.
- (xv) Perform periodic scans of the information system and real-time scans of files from external sources as files are downloaded, opened, or executed.

(2) *Other requirements.* This clause does not relieve the Contractor of any other specific safeguarding requirements specified by Federal agencies and departments relating to covered contractor information systems generally or other Federal safeguarding requirements for controlled unclassified information (CUI) as established by Executive Order 13556.

(c) *Subcontracts.* The Contractor shall include the substance of this clause, including this paragraph (c), in subcontracts under this contract (including subcontracts for the acquisition of commercial items, other than commercially available off-the-shelf items), in which the subcontractor may have Federal contract information residing in or transiting through its information system.

**CLAUSE I.46 – FAR 52.222-37 - EMPLOYMENT REPORTS ON VETERANS
(FEB 2016)**

(a) *Definitions.* As used in this clause, “active duty wartime or campaign badge veteran,” “Armed Forces service medal veteran,” “disabled veteran,” “protected veteran,” and “recently separated veteran,” have the meanings given in FAR 22.1301.

(b) Unless the Contractor is a State or local government agency, the Contractor shall report at least annually, as required by the Secretary of Labor, on--

(1) The total number of employees in the contractor's workforce, by job category and hiring location, who are protected veterans (*i.e.*, active duty wartime or campaign badge veterans, Armed Forces service medal veterans, disabled veterans, and recently separated veterans);

(2) The total number of new employees hired during the period covered by the report, and of the total, the number of protected veterans (*i.e.*, active duty wartime or campaign badge veterans, Armed Forces service medal veterans, disabled veterans, and recently separated veterans); and

(3) The maximum number and minimum number of employees of the Contractor or subcontractor at each hiring location during the period covered by the report.

(c) The Contractor shall report the above items by filing the VETS-4212 “Federal Contractor Veterans’ Employment Report” (see “VETS-4212 Federal Contractor Reporting” and “Filing Your VETS-4212 Report” at <http://www.dol.gov/vets/vets4212.htm>).

(d) The Contractor shall file VETS-4212 Reports no later than September 30 of each year.

(e) The employment activity report required by paragraphs (b)(2) and (b)(3) of this clause shall reflect total new hires, and maximum and minimum number of employees, during the most recent 12-month period preceding the ending date selected for the report. Contractors may select an ending date--

(1) As of the end of any pay period between July 1 and August 31 of the year the report is due; or

(2) As of December 31, if the Contractor has prior written approval from the Equal Employment Opportunity Commission to do so for purposes of submitting the Employer Information Report EEO-1 (Standard Form 100).

(f) The number of veterans reported must be based on data known to the contractor when completing the VETS-4212. The contractor's knowledge of veterans status may be obtained in a variety of ways, including an invitation to applicants to self-identify (in accordance with 41 CFR 60-300.42), voluntary self-disclosure by employees, or actual

knowledge of veteran status by the contractor. This paragraph does not relieve an employer of liability for discrimination under 38 U.S.C. 4212.

(g) The Contractor shall insert the terms of this clause in subcontracts of \$150,000 or more unless exempted by rules, regulations, or orders of the Secretary of Labor.

CLAUSE I.51 – FAR 52.223-3 – HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997) (ALTERNATE I) (JUL 1995)

(a) *“Hazardous material,”* as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material <i>(If none, insert “None”)</i>	Identification No.
Material Safety Data Sheets to be provided on a periodic basis as agreed to by Contracting Officer.	

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to --

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

Alternate I (Jul 1995)

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

**CLAUSE I.56 – 52.223-11 - OZONE-DEPLETING SUBSTANCES AND HIGH
GLOBAL WARMING POTENTIAL
HYDROFLUOROCARBONS (JUN 2016)**

(a) *Definitions.* As used in this clause--

“Global warming potential” means how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon Dioxide’s global warming potential is defined as 1.0.

“High global warming potential hydrofluorocarbons” means any hydrofluorocarbons in a particular end use for which EPA’s Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables of alternatives available at (<http://www.epa.gov/snap/>).

“Hydrofluorocarbons” means compounds that only contain hydrogen, fluorine, and carbon.

“Ozone-depleting substance” means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as--

(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or

(2) Class II, including, but not limited to hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), (d), and (e) and 40 CFR Part 82, Subpart E, as follows:

Warning

Contains (or manufactured with, if applicable) * _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

* The Contractor shall insert the name of the substance(s).

(c) *Reporting.* For equipment and appliances that normally each contain 50 or more pounds of hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons, the Contractor shall—

(1) Track on an annual basis, between October 1 and September 30, the amount in pounds of hydrofluorocarbons or refrigerant blends containing

hydrofluorocarbons contained in the equipment and appliances delivered to the Government under this contract by—

(i) Type of hydrofluorocarbon (e.g., HFC-134a, HFC-125, R-410A, R-404A, etc.);

(ii) Contract number; and

(iii) Equipment/appliance;

(2) Report that information to the Contracting Officer for FY16 and to www.sam.gov, for FY17 and after00

(i) Annually by November 30 of each year during contract performance;
and

(ii) At the end of contract performance.

(d) The Contractor shall refer to EPA's SNAP program (available at <http://www.epa.gov/snap>) to identify alternatives. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables available at <http://www.epa.gov/snap> .

CLAUSE I.57 – 52.223-12 – MAINTENANCE, SERVICE, REPAIR, OR DISPOSAL OF REFRIGERATION EQUIPMENT AND AIR CONDITIONERS (JUN 2016)

(a) *Definitions.* As used in this clause--

“Global warming potential” means how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon dioxide’s global warming potential is defined as 1.0.

“High global warming potential hydrofluorocarbons” means any hydrofluorocarbons in a particular end use for which EPA’s Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables of alternatives available at (<http://www.epa.gov/snap/>).

“Hydrofluorocarbons” means compounds that contain only hydrogen, fluorine, and carbon.

(b) The Contractor shall comply with the applicable requirements of sections 608 and 609 of the Clean Air Act (42 U.S.C. 7671g and 7671h) as each or both apply to this contract.

(c) Unless otherwise specified in the contract, the Contractor shall reduce the use, release, or emissions of high global warming potential hydrofluorocarbons under this contract by—

(1) Transitioning over time to the use of another acceptable alternative in lieu of high global warming potential hydrofluorocarbons in a particular end use for which EPA’s SNAP program has identified other acceptable alternatives that have lower global warming potential.

(2) Preventing and repairing refrigerant leaks through service and maintenance during contract performance;

(3) Implementing recovery, recycling, and responsible disposal programs that avoid release or emissions during equipment service as the equipment reaches the end of its useful life; and

(4) Using reclaimed hydrofluorocarbons, where feasible.

(d) For equipment and appliances that normally each contain 50 or more pounds of hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons, that will be maintained, serviced, repaired, or disposed under this contract, the Contractor shall—

(1) Track on an annual basis, between October 1 and September 30, the amount in pounds of hydrofluorocarbons or refrigerant blends containing hydrofluorocarbons added or taken out of equipment or appliances under this contract by—

(i) Type of hydrofluorocarbon (e.g., HFC-134a, HFC-125, R-410A, R-404A, etc.);

(ii) Contract number;

(iii) Equipment/appliance; and

(2) Report that information to the Contracting Officer for FY16 and to www.sam.gov, for FY17 and after--

(i) No later than November 30 of each year during contract performance; and

(ii) At the end of contract performance.

(e) The Contractor shall refer to EPA's SNAP program to identify alternatives. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables available at <http://www.epa.gov/snap/>.

CLAUSE I.62A – FAR 52.223-20 – AEROSOLS (JUN 2016)

(a) *Definitions.* As used in this clause--

“Global warming potential” means how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon dioxide’s global warming potential is defined as 1.0.

“High global warming potential hydrofluorocarbons” means any hydrofluorocarbons in a particular end use for which EPA’s Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables of alternatives available at <http://www.epa.gov/snap/>).

“Hydrofluorocarbons” means compounds that contain only hydrogen, fluorine, and carbon.

(b) Unless otherwise specified in the contract, the Contractor shall reduce its use, release, or emissions of high global warming potential hydrofluorocarbons, when feasible, from aerosol propellants or solvents under this contract. When determining feasibility of using a particular alternative, the Contractor shall consider environmental, technical, and economic factors such as--

- (1) In-use emission rates, energy efficiency;
- (2) Safety, such as flammability or toxicity;
- (3) Ability to meet technical performance requirements; and
- (4) Commercial availability at a reasonable cost.

(c) The Contractor shall refer to EPA’s SNAP program to identify alternatives. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables available at <http://www.epa.gov/snap/>.

CLAUSE I.62B – FAR 52.223-21 – FOAMS (JUN 2016)

(a) *Definitions.* As used in this clause--

“Global warming potential” means how much a given mass of a chemical contributes to global warming over a given time period compared to the same mass of carbon dioxide. Carbon dioxide’s global warming potential is defined as 1.0.

“High global warming potential hydrofluorocarbons” means any hydrofluorocarbons in a particular end use for which EPA’s Significant New Alternatives Policy (SNAP) program has identified other acceptable alternatives that have lower global warming potential. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables of alternatives available at <http://www.epa.gov/snap/>).

“Hydrofluorocarbons” means compounds that contain only hydrogen, fluorine, and carbon.

(b) Unless otherwise specified in the contract, the Contractor shall reduce its use, release, and emissions of high global warming potential hydrofluorocarbons and refrigerant blends containing hydrofluorocarbons, when feasible, from foam blowing agents, under this contract. When determining feasibility of using a particular alternative, the Contractor shall consider environmental, technical, and economic factors such as--

- (1) In-use emission rates, energy efficiency, and safety;
- (2) Ability to meet performance requirements; and;
- (3) Commercial availability at a reasonable cost.

(c) The Contractor shall refer to EPA’s SNAP program to identify alternatives. The SNAP list of alternatives is found at 40 CFR part 82, subpart G, with supplemental tables available at <http://www.epa.gov/snap/>.

**CLAUSE I.88 – FAR 52.244-6 - SUBCONTRACTS FOR COMMERCIAL ITEMS
(JUN 2016)**

(a) *Definitions.* As used in this clause—

“Commercial item and commercially available off-the-shelf item” have the meanings contained Federal Acquisition Regulation 2.101, Definitions.

“Subcontract” includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)

(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.203-13, Contractor Code of Business Ethics and Conduct (Oct 2015) (41 U.S.C. 3509), if the subcontract exceeds \$5.5 million and has a performance period of more than 120 days. In altering this clause to identify the appropriate parties, all disclosures of violation of the civil False Claims Act or of Federal criminal law shall be directed to the agency Office of the Inspector General, with a copy to the Contracting Officer.

(ii) 52.203-15, Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (Jun 2010) (Section 1553 of Pub. L. 111-5), if the subcontract is funded under the Recovery Act.

(iii) 52.204-21, Basic Safeguarding of Covered Contractor Information Systems (Jun 2016), other than subcontracts for commercially available off-the-shelf items, if flow down is required in accordance with paragraph (c) of FAR clause 52.204-21.

(iv) 52.219-8, Utilization of Small Business Concerns (Oct 2014) (15 U.S.C. 637(d)(2) and (3)), if the subcontract offers further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$700,000 (\$1.5 million for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(v) 52.222-21, Prohibition of Segregated Facilities (Apr 2015).

(vi) 52.222-26, Equal Opportunity (Apr 2015) (E.O. 11246).

(vii) 52.222-35, Equal Opportunity for Veterans (Oct 2015) (38 U.S.C. 4212(a));

(viii) 52.222-36, Equal Opportunity for Workers with Disabilities (Jul 2014) (29 U.S.C. 793).

(ix) 52.222-37, Employments Reports on Veterans (Feb 2016) (38 U.S.C. 4212).

(x) 52.222-40, Notification of Employee Rights Under the National Labor Relations Act (Dec 2010) (E.O. 13496), if flow down is required in accordance with paragraph (f) of FAR clause 52.222-40.

(xi)

(A) 52.222-50, Combating Trafficking in Persons (Mar 2015) (22 U.S.C. chapter 78 and E.O. 13627).

(B) Alternate I (Mar 2015) of 52.222-50 (22 U.S.C. chapter 78 and E.O. 13627).

(xii) 52.222-55, Minimum Wages under Executive Order 13658 (Dec 2015).

(xiii) 52.225-26, Contractors Performing Private Security Functions Outside the United States (Jul 2013) (Section 862, as amended, of the National Defense Authorization Act for Fiscal Year 2008; 10 U.S.C. 2302 Note).

(xiv) 52.232-40, Providing Accelerated Payments to Small Business Subcontractors (Dec 2013), if flow down is required in accordance with paragraph (c) of FAR clause 52.232-40.

(xv) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (Feb 2006) (46 U.S.C. App. 1241 and 10 U.S.C. 2631), if flow down is required in accordance with paragraph (d) of FAR clause 52.247-64.

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this 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
5/2/2001	Policy	141.1		Department of Energy Management of Cultural Resources
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		Unclassified Foreign Visits and Assignments Program
3/31/2014	Order	150.1A		Continuity Programs
11/2/2005	Order	151.1C		Comprehensive Emergency Management System
6/27/2007	Order	153.1		Departmental Radiological Emergency Response Assets
12/23/2008	Order	200.1A		Information Technology Management
1/7/2005	Order	203.1		Limited Personal Use of Government Office Equipment Including Information Technology
5/8/2001	Policy	205.1		Departmental Cyber Security Management Policy
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
4/19/2008	Order	221.1A		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
8/30/2011	Order	232.2	Admin Chg. 1 3/12/14	Occurrence Reporting and Processing of Operations Information
12/13/2010	Order	241.1B	Chg.1 (Admin Change) 4/26/16	Scientific and Technical Information Management
3/11/2013	Order	243.1B		Records Management Program
2/2/2006	Order	243.2		Vital Records
2/23/2011	Order	252.1A	Admin Chg. 1 3/12/13	Technical Standards Program

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11/19/2009	Order	313.1		Management and Funding of the Department's Overseas Presence
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. 5 9/30/14	Contractor Human Resource Management Programs
9/29/2014	Order	350.3		Labor Standards Compliance, contractor Labor Relations, and Contractor Workforce Restructuring Programs
4/14/2014	Policy	364.1		Health and Safety Training Reciprocity
8/17/2009	Order	410.2	Admin Chg. 1 4/10/14	Management of Nuclear Materials
4/21/2005	Order	412.1A	Admin Chg. 1 6/21/14	Work Authorization System
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. 2 (PgChg) 5/12/16	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	Admin Chg. 1 1/16/13	Information Technology Project Management
2/8/2011	Policy	420.1		Department of Energy Nuclear Safety Policy Compliance Note: Only applicable to BNL facilities categorized as Hazardous Category 1,2 or 3 nuclear facilities
12/4/2012	Order	420.1C	Chg.1 2/27/15	Facility Safety Compliance Note: 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 Compliance Note: 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

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ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
4/16/2010	Order	425.1D	Admin Chg. 1 4/2/13	Verification of Readiness to Start Up or Restart Nuclear Facilities Compliance Note: Only applicable to BNL facilities categorized as Hazardous Category 1, 2, or 3 nuclear facilities
4/21/2010	Order	426.2	Admin Chg. 1 7/19/13	Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities
9/24/2003	Order	430.1B	Admin Chg. 2 4/25/11	Real Property and Asset Management
4/21/2010	Order	433.1B	Admin Chg. 1 3/12/13	Maintenance Management Program for DOE Nuclear Facilities Compliance Note: Only applicable to BNL facilities categorized as Hazardous Category 1, 2 or 3 nuclear facilities
11/7/2013	Policy	434.1A		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
11/27/2002	Order	440.2C	Admin Chg. 1 6/22/11	Aviation Management and Safety
3/7/2008	Manual	441.1-1		Nuclear Material Packaging Manual
6/6/2001	Order	442.1A		Department of Energy Employee Concerns Program
7/29/2011	Order	442.2		Differing Professional Opinions for Technical Issues Involving Environment, Safety and Health
3/7/2011	Order	443.1B	Chg. 1 (PgChg) 4/21/16	Protection of Human Research Subjects
4/25/2011	Policy	450.4A		Integrated Safety Management Policy
7/21/2011	Order	452.8		Control of Nuclear Weapon Data
5/31/2011	Order	456.1	Admin Chg. 1 2/14/13	The Safe Handling of Unbound Engineered Nanoparticles
9/15/2005	Policy	456.1		Secretarial Policy Statement on Nanoscale Safety
2/11/2011	Order	458.1	Admin Chg. 3 1/15/13	Radiation Protection of the Public and the Environment
5/14/2010	Order	460.1C		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

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ISSUED	TYPE	NUMBER	THROUGH CHANGE	TITLE Includes Compliance Notes as Necessary
11/10/2008	Order	462.1	Admin Chg. 1 7/10/13	Import and Export of Category 1 and 2 Radioactive Sources Aggregated Quantities
2/10/2016	Policy	470.1B		Safeguards and Security Program
8/12/2008	Order	470.3B		Graded Security Protection (GPS) Policy
7/21/2011	Order	470.4B		Safeguards and Security Program
6/2/2014	Order	470.5		Insider Threat Program
9/2/2015	Order	470.6		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
3/23/2016	Order	473.3A		Protection Program Operations
6/27/2011	Order	474.2	Admin Chg. 3 5/15/15	Nuclear Material Control and Accountability
12/10/2004	Order	475.1		Counterintelligence Program
10/3/2014	Order	475.2B		Identifying Classified Information
12/17/2014	Policy	481.1		DOE's Policy Regarding Laboratories, Plants and Sites Engaging in Strategic Partnership Projects with Other Federal Agencies, Independent Organizations, and the Private Sector
1/3/2001	Manual	481.1-1A	Admin Chg. 1 9/28/01	Reimbursable Work for Non Federal Sponsored Process Manual
11/6/2013	Order	483.1A		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
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. 1 (Pg.Chg.) 8/13/2015	Official Foreign Travel
3/30/2012	Order	580.1A	Admin Chg. 1 10/22/12	Department of Energy Personal Property Management Program