



**NATIONAL SYNCHROTRON LIGHT SOURCE II (NSLS-II)
RING BUILDING CONSTRUCTION
RFP NO. 7700000004**

TABLE OF CONTENTS

- 1.0 PREAMBLE**
- 2.0 INTRODUCTION**
- 3.0 SCOPE OF WORK**
- 4.0 GENERAL INFORMATION AND INSTRUCTIONS**
 - 4.1 Form of Proposal and Manner of Submission
 - 4.2 Method of Procurement
 - 4.3 Explanation of Solicitation Documents
 - 4.4 Disclosure
- 5.0 VOLUME 1 – CONSTRUCTION PROJECT PROPOSAL**
 - 5.1 FACTOR 1 - CONTRACTOR SAFETY RECORD AND PROGRAM**
 - 5.1.1 Submission Requirements
 - 5.1.2 Evaluation Criteria
 - 5.2 FACTOR 2 - PAST PERFORMANCE IN COMPARABLE WORK**
 - 5.2.1 Submission Requirements
 - 5.2.2 Evaluation Criteria
 - 5.3 FACTOR 3 - KEY PROJECT PERSONNEL**
 - 5.3.1 Submission Requirements
 - 5.3.2 Evaluation Criteria
 - 5.4 FACTOR 4 - PROPOSED MAJOR SUBCONTRACTOR SAFETY AND PERFORMANCE RECORD**
 - 5.4.1 Submission Requirements
 - 5.4.2 Evaluation Criteria
 - 5.5 FACTOR 5 - PROJECT MANAGEMENT**
 - 5.5.1 Submission Requirements
 - 5.5.2 Evaluation Criteria
 - 5.6 FACTOR 6 - QUALITY ASSURANCE / QUALITY CONTROL**
 - 5.6.1 Submission Requirements
 - 5.6.2 Evaluation Criteria

6.0 VOLUME 2 – PRICE PROPOSAL

6.1 BUSINESS PROPOSAL

- 6.1.1 Corporate Profile and Financial Information
- 6.1.2 Offeror Representations and Certifications
- 6.1.3 Bonds

6.2 PRICE AND OPTIONS

- 6.2.1 Base Price for Ring Building Construction
- 6.2.2 Amendments
- 6.2.3 Options

7.0 SOURCE SELECTION BOARD/SOURCE SELECTION OFFICIAL

8.0 EVALUATION AND BASIS FOR AWARD

- 8.1 Evaluation
- 8.2 Basis for Award

9.0 INSURANCE

10.0 SMALL BUSINESS SUBCONTRACTING PLAN

11.0 ON-SITE EMERGENCY OCCUPATIONAL MEDICAL PERSONNEL AND FACILITIES

12.0 SUBSTANCE ABUSE PROGRAM

13.0 CERTIFICATIONS

14.0 EEO/AFFIRMATIVE ACTION

15.0 PHASE FUNDING

16.0 DAVIS-BACON REQUIREMENTS

17.0 ENCLOSURES

Enclosure 1 - BSA Sample Contract

Attachment A - BSA General Terms and Conditions for NSLS-II Conventional Construction

Attachment B - Davis – Bacon General Decision: NY080013 09/19/2008 NY13

Attachment C – Specification SPC-CF-CI-FAC-001 for NSLS-II dated September 26, 2008

Attachment D - Drawings dated September 26, 2008

Attachment E - Small Business Subcontracting Plan

Attachment F - BSA Model Environment, Safety and Health Plan

Enclosure 2 - Offeror Representations and Certifications

Enclosure 3 - AMS Form 017: Bid Bond Form

Enclosure 4 - SF 1413 – Statement and Acknowledgement

Enclosure 5 - Instruction for Obtaining NSLS-II Plans and Specifications

Enclosure 6 - NSLS-II Proposal Pricing Sheets

REQUEST FOR PROPOSALS

1.0 PREAMBLE

Brookhaven Science Associates, LLC, (BSA) under Contract DE-AC02-98CH10886, for the operation of Brookhaven National Laboratory (BNL), with the U.S. Department of Energy (DOE), herewith solicits your proposal for the Conventional Facilities construction of the National Synchrotron Light Source II (NSLS-II).

2.0 INTRODUCTION

The conventional facilities required for the NSLS-II will include a Ring Building of approximately 392,000 square feet.

The Ring Building will serve as the centerpiece of the NSLS-II and will house offices for the visiting user community, laboratory space, the main accelerator ring, experimental beamlines, experimental floor area, and supporting facilities.

The proposed construction type for the Ring building will be reinforced slab on grade with perimeter footing, structural steel frame with composite reinforced concrete slab on metal deck for the upper floors, and insulated metal panel exterior. Roofing may be a combination of standing seam metal roof, built-up bitumin or membrane roof systems.

Although the building design will generally involve standard commercial design and construction techniques, there are some additional considerations due to the specific requirements of the accelerator, experimental beamlines, and types of research that will take place in laboratory spaces. Placement of the floor slab will involve an estimated 35,000 cubic yards of concrete, with special consideration given to minimization of differential settlement to assure alignment integrity of the installed accelerator and beamlines. The NSLS-II Ring Building has been designed to minimize sources of vibration and transmission of vibration that would impact beam stability in the accelerator and experimental beamline areas and laboratory spaces. Additionally, the building design minimizes electromagnetic interference (EMI) and radio frequency interference (RFI) in the experimental beamline areas, certain portions of the accelerator, and laboratory spaces by the routing of electrical cabling and placement and shielding of electrical equipment. There are specific temperature stability requirements in the accelerator, experimental beamline and certain laboratory spaces that will require a heating, ventilation and air conditioning (HVAC) system and control design that exceeds standard commercial practices.

This acquisition is a "Best Value" procurement. Best Value employs a trade-off process that permits award to other than the lowest priced Offeror or other than the highest technically rated Offeror. BSA will evaluate proposals, in accordance with the following six criteria: contractor safety record and program, past performance in comparable work, key project personnel, major subcontractor safety and performance record, project management and quality assurance/quality control.

BSA places great importance on worker safety and the maintenance of a safe worksite. Therefore, a safety incentive has been included as part of this procurement. The safety incentive is based on the following factors; 1) Accident/Injury Rates; 2) Serious violation of OSHA requirements and 3) Responsiveness to less serious OSHA requirements.

The estimated cost for construction of the NSLS-II Ring Building is approximately \$180,000,000.00 to \$205,000,000.00.

3.0 SCOPE OF WORK

Furnish all labor, services, materials, tools, and equipment required to complete construction of the Ring Building for the NSLS-II in strict accordance with BSA Specification SPC-CF-CI-FAC-001 dated September 26, 2008 and the drawings listed therein.

4.0 GENERAL INFORMATION AND INSTRUCTIONS

Plans and specifications may be obtained from BlueprintOnline. Costs associated with obtaining these documents will depend on the number of documents ordered. Detailed instructions for accessing plans and specifications at <http://www.blueprintonline.com> are contained in Enclosure 5 of this document.

A pre-proposal meeting and inspection of the jobsite will be held at 10:00 a.m. on October 30, 2008, in the Brookhaven Center, South Room. Although not mandatory, it is strongly recommended that all prospective Offerors attend the pre-proposal meeting.

A list of all individuals attending the pre-proposal meeting who do not possess a valid Brookhaven ID badge must be faxed to Carrie Sauter (fax: 631/344-5667, voice: 631/344-7152, or email: sauter@bnl.gov) no later than three days prior to the pre-proposal meeting. In addition, indicate company name, job name and RFP number, and if the individuals are U.S. citizens. Foreign nationals must complete a guest registration at <http://www.bnl.gov> and obtain approval for site access in order to attend the pre-proposal meeting (processing must be submitted 30 days prior to the visit). On the day of arrival, they must allow an additional 20 minutes for check-in and issuance of a temporary pass by security staff.

Failure to comply with these requirements may hamper access or cause access to be denied.

BSA has established the following schedule for achieving evaluation, selection, approval, award, and performance.

MILESTONE	DATE
Issuance of the NSLS-II Ring Building RFP	October 1, 2008
Pre-proposal Meeting	October 30, 2008
Proposal Submission*	November 21, 2008
Award	February 20, 2009
Construction Start	April 6, 2009
Construction Completed	April 30, 2012

*Proposals and options shall remain firm for **90** days after the submission date, to allow time for review, selection, and award.

4.1 Form of Proposal and Manner of Submission

Proposals will consist of a two volume set, appropriately tabbed, as set forth in Section 5.0. Proposals shall be concise, clear and complete in every instance, and restricted to relevant information. The response shall clearly and fully demonstrate the Offeror's capability, knowledge, and performance with regard to the evaluation criteria described in the Request for Proposals (RFP). Incomplete or partial proposals in any material respect affecting the acceptability of the proposal will not be considered. Failure to respond or follow the instructions regarding the organization, content, layout, or format of the proposal can result in the Offeror's proposal being considered deficient. BSA reserves the right to allow proposal corrections, and to conduct interviews with those contractors determined to be within the competitive range, when deemed necessary to determine the successful Offeror. Offers may be withdrawn by written or facsimile request, at the number listed below, prior to opening. Modifications to proposals previously submitted must be in written hardcopy and received prior to the time fixed for receipt of the offer. Facsimile transmission of proposals or modifications thereto will not be accepted without prior concurrence by BSA's Procurement and Property Management Division representative listed below.

A complete written proposal must be received by BSA at the address below no later than **4:00 p.m. local time on November 21, 2008**. If an amendment to this solicitation is issued, all terms and conditions that are not modified remain unchanged. Offerors shall acknowledge receipt of all amendments as part of their price

proposal, giving number and date of each. Failure to do so may render an offer unacceptable. BSA reserves the right to postpone the date of submission, and to amend this request as it considers necessary.

Proposals, including their withdrawal or modification, received after the closing date shall be considered late. Except as otherwise specifically provided in the solicitation, such responses may be considered for award if the PPM manager, or his designee, determines that the award is in BSA's best interest. **Proposals will be opened in private.**

The proposal and all supporting documentation which the Offeror believes will fully describe the proposed capability should be submitted sealed, with the contents clearly identified.

The outside of each package must be marked with Brookhaven RFP Number 7700000004 and addressed as follows:

Attention: Mr. David. J. Pavaglio
Contracts Administrator
Brookhaven National Laboratory
Building 830M
Upton, New York 11973-5000

Contact Information

telephone: 631/344-8461
fax: 631/344-5667
email dpavegli@bnl.gov

The first page of the proposal must show:

- (a) **The solicitation number - 7700000004;**
- (b) **The name, address, email and telephone and facsimile numbers of the Offeror;**
- (c) **A statement specifying the extent of agreement with all terms, conditions, and provisions included in the solicitation;**
- (d) **The name, address, email and telephone and facsimile numbers of persons authorized to negotiate on the Offeror's behalf with BSA in connection with this solicitation; and**
- (e) **Name, title, and signature of person authorized to sign the proposal. Proposals signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to BSA.**

4.2 Method of Procurement

This acquisition is a "Best Value" procurement. The utilization of this procedure is expected to provide the greatest overall benefit to BSA. Best Value employs a trade-off process that permits award to other than the lowest priced Offeror or to the highest technically rated Offeror. The trade-off process associated with Best Value involves a comparative weighing of the evaluation factors and sub-factors identified in the RFP. Specifically, the trade-off process involves selecting the most advantageous offer based on an integrated assessment of both technical factors and price, taken in their assigned relative importance. BSA will evaluate proposals in accordance with the criteria described herein, and will award a firm fixed-price contract to the acceptable Offeror whose proposal conforms with all the terms and conditions of the solicitation and whose proposal is determined to represent the overall best value to BSA, considering performance, capability, and price. Price will not be rated or scored, but will be a significant factor in the Best Value analysis.

4.3 Explanation of Solicitation Documents

Should an Offeror find any discrepancies in, or omissions from, any of the documents, or be in doubt as to the meaning of any document, it should immediately advise BSA in writing (or by email to dpavegli@bnl.gov) no later than five business days prior to the proposal due date in order to allow time for

responses to be received by all prospective Offerors. Only written explanations or instructions given before the award of a contract will be binding. Any information given to a prospective Offeror concerning this solicitation will be furnished promptly to all other prospective Offerors as an amendment to the solicitation if that information is necessary in submitting proposals or if the lack of it would be prejudicial to other prospective Offerors.

4.4 Disclosure

Proposals made to BSA in response to this RFP will not be disclosed except to appropriate BSA personnel, its subcontractor consultants involved in reviewing responses to this RFP, and/or U.S. Government personnel.

Offerors that include in their proposals data that they do not want disclosed to the public for any purpose, or used by BSA except for evaluation purposes, shall:

- (1) Mark the title page with the following legend:

“This proposal includes data that shall not be disclosed except to appropriate BSA personnel, its subcontractor consultants involved in reviewing responses to the RFP, and/or U.S. Government personnel and shall not be disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this Offeror as a result of/or in connection with the submission of this data, BSA shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit BSA’s right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [*insert numbers or other identification of sheets*]”; and

- (2) Mark each sheet of data it wishes to restrict with the following legend:

“Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal.”

5.0 VOLUME 1 – CONSTRUCTION PROJECT PROPOSAL

Volume 1 – Provide fourteen (14) copies and one (1) electronic copy (CD/DVD or flash drive) of the construction project proposal and any amendments thereto. No pricing data of any kind shall be included in the project proposal; include price information only in Volume 2.

Section I. General Summary

Volume 1 should be prepared simply and economically and be legible, clear and coherent. Each section of Volume 1 should be individually tabbed as set forth below.

The Offeror shall discuss its approach to successful management of the NSLS-II project from contract award through acceptance. If the firm is a joint venture, list the individual firms and briefly describe the nature of the association and the responsibilities of each firm. The proposal must describe the capability of the Offeror to perform the work, describe the Offeror’s understanding of the requirements contained in the Statement of Work and set forth full, accurate, and complete information as required by the RFP.

The following factors, in the order of their weighting, have been identified as significant measures of an Offeror’s capabilities. Price will not be rated or scored, but will be a significant factor in the best value analysis.

PROPOSAL AND RELATED EVALUATION FACTORS

Proposal Location	Factor Number	Description	Relative Importance
Tab A	1	Contractor safety record and program	Major
Tab B	2	Past performance in comparable work	Moderate
Tab C	3	Key project personnel	Moderate but less than Factor 2
Tab D	4	Proposed major subcontractor safety and performance record	Moderate but less than Factor 3
Tab E	5	Project management	Minor
Tab F	6	Quality assurance/quality control	Minor but less than Factor 5

5.1 Tab A: Factor 1 – Contractor Safety Record and Program

5.1.1 Submission Requirements

(a) **Contractor Safety and OSHA Compliance**

(1) Provide the Contractor’s 2004-2006 average job safety record. The Bureau of Labor Statistics (BLS) Incidence rates are provided for reference purposes. These rates will be utilized as set forth in section 5.1.2 - Evaluation Criteria:

Lost time frequency rate (DART) = 2.70
Recordable incident rate = 5.40

i) Lost time frequency rate (DART) = $\frac{\text{2004}}{(\)} \frac{\text{2005}}{(\)} \frac{\text{2006}}{(\)}$
ii) Recordable incident rate = $\frac{\text{2004}}{(\)} \frac{\text{2005}}{(\)} \frac{\text{2006}}{(\)}$

Submit copy of OSHA Forms 300 and 300A for 2004 – 2007.

Submit a record of all OSHA citations and outcomes for 2004 – 2007.

Submit explanation and/or supplemental data for periods that are out-of-tolerance.

(2) Demonstrate that the Contractor’s 2004 – 2007 Insurance Experience Modification Rating is less than or equal to 1.0 for each year.

i) Experience Modification Rating = $\frac{\text{2004}}{(\)} \frac{\text{2005}}{(\)} \frac{\text{2006}}{(\)} \frac{\text{2007}}{(\)}$

Provide backup documentation from an independent source, such as the insurance carrier, to verify ratings.

(3) Joint ventures or teams shall submit the above information for each corporate entity in the joint venture or team.

(b) **Contractor Safety Program**

Provide Offeror’s safety program/procedures* and discuss its application on the NSLS-II project. It is important that the safety incentive, which is included in the contract, flow down to subcontractors and workers. As a part of the response to this solicitation, the Offeror shall describe the basis that will be used to determine the share and flow-down to subcontractors and workers. Identify current and past projects that were certified under the OSHA Voluntary Protection Program.

***Note:** The successful Offeror will be required to submit an Environment, Safety and Health (ESH) Plan that meets or exceeds requirements set forth in BSA's model plan, Enclosure 1: Attachment F.

5.1.2 Evaluation Criteria

BSA will evaluate the required information for conformance with the requirements set forth in the RFP. In evaluating contractor proposals, safety performance records which are better than the target rates for the years that the Contractor performed work on multiple projects similar in size, scope, and/or complexity to NSLS-II will carry a higher rating than for years they performed work on a single project or projects of lesser scope and complexity. Contractors with safety records which better the BLS incidence, targets as defined in the RFP, will be rated higher than those that meet or fail to meet the BLS incidence targets. As BLS incidence rates are not available for 2007 the Offeror's OSHA Form 300 and 300A will be utilized to evaluate the trend in the Offeror's safety performance. For periods not meeting the targets set forth, explanations and supplemental data as to the facts surrounding the periods that are out of tolerance will be reviewed. In those circumstances, BSA will evaluate any mitigating factors and corrective actions. Demonstration of continuous improvement and program changes may serve to mitigate out-of-tolerance periods.

In evaluating joint ventures, teams, or firms having multiple divisions, BSA will only evaluate the safety record of the business entities comprising the joint venture or team and, for firms with multiple divisions, the division or unit being proposed. Scores for the business entities comprising the joint ventures, teams, or firms having multiple divisions will be averaged to formulate a final score for the joint venture, team, or firm having multiple divisions

BSA will evaluate the Offeror's overall approach toward maintaining a safe worksite and the significant aspects of its safety and health program. Particular attention will be paid to the Offeror's approaches relating to site safety management, safety incentive distribution, site inspections, incident reviews, and program reviews. **During the evaluation process, site visit(s) to an Offeror's ongoing job site may be conducted to validate information submitted.**

In evaluating the Offeror's proposal, the Offeror's Contractor Safety and OSHA Compliance carries equal weight with the Contractor Safety Program.

5.2 Tab B: Factor 2 – Past Performance in Comparable Work

5.2.1 Submission Requirements

"Past performance" refers to the quality of recent project performance from the owner's perspective. Offerors will be evaluated in terms of their performance in construction of facilities similar in scope and/or complexity to NSLS-II. Offerors will list all projects completed in the last seven (7) years that are of similar size and/or complexity as described herein. BSA will use the specific project references submitted as part of its past performance evaluation. BSA may contact and interview the points of contact and reserves the right to interview other individuals acting for the listed reference, if the listed reference is not available.

The Offeror shall:

Submit a list of all qualifying projects, as defined above, constructed during the last seven (7) years. Include the following information for each project:

- (1) Project title
- (2) Contract amount at start and completion
- (3) Description of work and location
- (4) Name, address, and telephone number of owner or contracting representative and Architect of Record
- (5) A discussion of experienced delays and cost growth

5.2.2 Evaluation Criteria

BSA will perform an assessment of completed or ongoing projects, considering the scope, size, and/or complexity; schedule performance; budget performance; and owner satisfaction for each project offered, and the degree of success of the construction firm's relevant performance on these projects within a period of seven (7) years preceding the date of this solicitation. Successful construction of multiple projects with a size, scope, and/or complexity equivalent to or greater than NSLS-II will carry a higher rating than construction of a single project. Completion of projects within or below budget will carry a higher rating than those projects experiencing overruns. BSA will consider the currency and relevance of the information, source of the information, context of the data, and general trends in contractor performance. More recent and more comparable projects are more indicative of the Offeror's current capabilities and may, therefore, have greater impact on the past performance evaluation than less recent, less comparable projects. During the evaluation process, site visit(s) to an Offeror's ongoing jobsite(s) may be conducted to validate information submitted. In evaluating joint ventures, teams, or firms having multiple divisions, BSA will only evaluate past performance of the business entities comprising the joint venture or team, and for firms with multiple divisions, the division or unit submitting the offer. Owners/references may be asked to comment on items such as quality of construction; timeliness; management of the work; subcontractor management, including timely payment to subcontractors or suppliers; safety; relations between the owner and Contractor; and the level of support for such things as Operations and Maintenance (O&M) manuals, as-built documentation, training, correcting construction errors, warranty work, etc.

In order for BSA to obtain candid, unbiased interview comments, BSA will not release the interview forms to the Offeror at any time. BSA will place a higher value on projects that document successful outcomes and are supported by outside source confirmation or personal knowledge. BSA will place a higher value on projects, that provided particularly difficult or unique challenges, and in the innovative methods the Contractor used to resolve problems successfully. BSA's evaluation is not limited to past performance information on the cited example projects.

5.3 Tab C: Factor 3 – Key Project Personnel

5.3.1 Submission Requirements

The Offeror shall provide a consolidated list to include name, position title, description of project responsibilities, and a resume for the following key personnel:

- (a) Project Manager
- (b) Project Superintendent
- (c) Project Safety Manager

The Offeror shall demonstrate that it has the necessary structure and experienced, qualified personnel within its organization to effectively manage, control, administer and execute safe construction operations and subcontracts. Indicate whether the key personnel identified have had a significant role in any of the cited projects provided in response to Section 5.2 – Past Performance in Comparable Work.

By identifying these personnel, the Offeror is making a commitment that, barring unforeseen circumstances, they are personnel who will be assigned to the project. Key personnel submitted shall not be changed after award without the prior written approval of BSA. In the event the selected firm decides to utilize personnel in the performance of this Contract for which resumes were not submitted prior to award, the firm shall, prior to the utilization of these personnel, submit their resumes to BSA for approval. The qualifications of the substituted personnel must be equal to or superior to those whose resumes were submitted.

5.3.2 Evaluation Criteria

BSA will evaluate the required information to determine if the Offeror's key personnel meet the qualifications necessary, which includes performance on completed or ongoing projects of similar scope, size

and/or complexity and the ability to manage, control, and perform construction both safely and efficiently. References on cited project(s) may be asked about the performance of key personnel proposed for this project.

The proposed Project Manager will be evaluated on the level of experience with large, high-profile projects; projects involving management of the project safety, budget, schedule, and coordination of multiple trades; and projects whose scope involved substantial earth work and concrete work. In evaluating an Offeror's proposals, the Project Manager's experience and successful completion of multiple projects similar in size, scope, and/or complexity to NSLS-II will carry a higher rating than construction of a single project or projects of lesser scope, and complexity. Projects that were delivered early, under budget, and with an excellent safety record will be rated higher than those delivered late, over budget, and/or with a lesser safety record.

The proposed Project Superintendent will be evaluated on the level of experience in the supervision of construction of one or more projects similar in size, scope, and/or complexity to NSLS-II involving jobsite management and coordination of multiple trades, and projects whose scope involved substantial earth work and concrete work. In evaluating an Offeror's proposals, the Project Superintendent's experience and successful completion of multiple projects similar in size, scope, and/or complexity to NSLS-II will carry a higher rating than construction of a single project or projects of lesser scope and complexity. Projects that were delivered early and under budget with an excellent safety record will be rated higher than those delivered late, over budget, or with a lesser safety record.

The proposed Project Safety Manager will be evaluated on the level of experience related to the management and execution of construction safety programs on large, high-profile projects involving management and coordination of multiple trades, and projects whose scope involved substantial earth work and concrete work. In evaluating an Offeror's proposals, the Project Safety Manager's experience and successful safety record on multiple projects similar in size, scope, and/or complexity to NSLS-II will carry a higher rating than on a single project or projects of lesser scope and complexity. Projects with safety records that better the BLS incidence targets, as defined in this RFP, will be rated higher than those that meet or fail to meet the BLS incidence targets. Multiple projects with excellent safety records will be rated higher than those meeting the BLS incidence targets or with lesser records.

In evaluating the Offeror's proposal, the Offeror's key personnel each will carry the same weight.

5.4 Tab D: Factor 4 – Proposed Major Subcontractor Safety and Performance Record

5.4.1 Submission Requirements

Proposed concrete, steel erection, electrical, and mechanical subcontractors shall have successfully completed one or more projects of similar scope and complexity within the past seven (7) years. Each proposed major subcontractor's BLS incidence DART and Recordable Incident Rate, for the three-year period defined below, shall be less than the current published BLS incidence rates for construction in their trade. Subcontractors shall also have an Insurance Experience Modification Rating (EMR) equal to or less than one (1). In the event that the decision is made to use a different subcontractor than proposed, that alternate subcontractor's performance and safety record shall be equal to or better than the subcontractor originally proposed.

- (a) For each of the four proposed major subcontractors, provide the subcontractor safety and BLS compliance statistics.
 - (1) Provide each of the four proposed major subcontractor's 2004-2006 average job safety record. The industry BLS Incidence rates for the specific trades are provided for reference purposes. These rates will be utilized as set forth in section 5.4.2 - Evaluation Criteria:

Concrete

(a) Lost time frequency rate (DART) = 4.4
(b) Recordable incident rate = 6.9

Steel

(a) Lost time frequency rate (DART) = 4.9
(b) Recordable incident rate = 8.5

Electrical

(a) Lost time frequency rate (DART) = 2.7
(b) Recordable incident rate = 5.8

Mechanical

(a) Lost time frequency rate (DART) = 3.5
(b) Recordable incident rate = 7.2

Provide the following information for each of the four proposed major subcontractors.

		<u>2004</u>	<u>2005</u>	<u>2006</u>
(a) Lost time frequency rate (DART)	=	()	()	()
(b) Recordable incident rate	=	()	()	()

Submit copy of OSHA Forms 300 and 300A for 2004 – 2007 for each of the four proposed major subcontractors.

Submit a record of all OSHA citations and outcomes for 2004 – 2007.

Submit explanation and/or supplemental data for periods that are out of tolerance.

- (2) Demonstrate that each of the four proposed major subcontractor's 2004 – 2007 Insurance Experience Modification Rating is less than or equal to 1.0 for each year.

		<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
(a) Experience Modification Rating	=	()	()	()	()

Provide backup documentation from an independent source, such as the insurance carrier, to verify ratings for each subcontractor.

- (b) For each of the four proposed major subcontractors, submit a list of projects constructed during the past seven (7) years demonstrating successful performance on construction similar in scope and/or complexity to the NSLS-II project. For each listed project, indicate:
- (1) Project title
 - (2) Contract amount
 - (3) Description of work and location.
 - (4) Name, address and telephone number of General Contractor, owner or contracting representative.

5.4.2 Evaluation Criteria

- (a) BSA will evaluate the required information for conformance with the requirements set forth in the RFP. In evaluating subcontractors, those with safety performance records which are better than the required targets for the years that the contractor performed work on multiple projects similar in size, scope, and/or complexity to NSLS-II will carry a higher rating than for years they performed work on a single project or projects of lesser scope and complexity. Subcontractors with safety records which better the BLS incidence targets, as defined in the RFP, will be rated higher than those that

meet or fail to meet the BLS incidence targets. As BLS incidence rates are not available for 2007, the four major subcontractor's OSHA Form 300 and 300A will be utilized to evaluate the trend in the respective subcontractor's safety performance. For periods not meeting the targets set forth, explanations and supplemental data as to the facts surrounding the periods that are out of tolerance will be reviewed. In those circumstances, BSA will evaluate any mitigating factors and corrective actions. Demonstration of continuous improvement and program changes may serve to mitigate out-of-tolerance periods.

- (b) BSA will perform an assessment of completed or ongoing projects, considering the scope, size, and/or complexity in addition to the degree of success of the subcontractor's relevant performance on these projects within a period of seven (7) years preceding the date of this solicitation. BSA will consider the currency and relevance of the information, source of the information, context of the data, and general trends in the subcontractor's performance. More recent and more comparable projects are more indicative of the subcontractor's current capabilities and may, therefore, have greater impact on the past performance evaluation than less recent, less comparable projects.

In evaluating a subcontractor's past performance, the successful completion of complex projects both on schedule and within budget is critical to the NSLS-II Project. Successful performance on multiple projects with a size, scope and/or complexity equivalent to or greater than NSLS-II will carry a higher rating than construction of a single project.

In evaluating joint ventures, teams, or firms having multiple divisions, BSA will only evaluate past performance of the business entities comprising the joint venture or team and, for firms with multiple divisions, the division or unit being proposed. Owners/references may be asked to comment on items such construction, timeliness, including timely payment to suppliers, safety, its relations between owner and General Contractor, Operations and Maintenance (O&M) manuals, correcting construction errors, warranty work, etc.

In evaluating the Offeror's proposal, the Offeror's Subcontractor Safety and OSHA Compliance carries equal weight with the Subcontractor's Performance Record.

5.5 Tab E: Factor 5 – Project Management

5.5.1 Submission Requirements

Planning and Scheduling

- (a) Describe the project controls used on projects identified in Section 5.2 of this solicitation. Discuss the project controls and how they were used to manage the construction budget and schedule. Discuss internal procedures for handling delays to minimize schedule growth.
- (b) Describe the cost and document control systems and procedures that will be utilized to manage NSLS-II conventional construction.
- (c) Discuss qualifications, organization and experience of project control staffing at both the corporate and proposed project levels and their ability to support project requirements.

5.5.2 Evaluation Criteria

BSA will evaluate:

- (a) the strength of the overall Offeror experience and applications of Project Controls, document control systems, and other cost control or management systems utilized in the management of projects of similar size and/or complexity, budget and schedule.
- (b) the cost and document control systems and procedures that will be utilized to manage NSLS-II conventional construction.

- (c) the Offeror's Project Management staffing, its qualifications, organization and experience and ability to support project requirements.

The demonstrated ability to manage multiple large complex projects will be rated higher than single or smaller scale projects. Greater experience levels and the capability to support emerging project requirements will be rated higher than lesser qualifications and experience levels and abilities to support NSLS-II project management requirements.

5.6 Tab F: Factor 6 – Quality Assurance/Quality Control

5.6.1 Submission Requirements

Describe the Offeror's quality control approach, corporate systems, and capabilities to maintain quality control of the construction. Describe the proposed quality control organization, including the proposed staffing plan. There is no need to submit a quality control plan, as the successful Offeror will provide that after award. BSA is interested in demonstrable capabilities to assure and control quality and how the Offeror will implement its quality assurance program on this project.

5.6.2 Evaluation Criteria

BSA will evaluate the Offeror's quality system to determine its applicability to the NSLS-II project and its capability related to plans, procedures and the organization necessary to provide quality materials and workmanship, so as to comply with requirements of the contract. A mature, successfully implemented quality assurance program will be rated higher than a new one or one with no implementations.

6.0 VOLUME 2 – PRICE PROPOSAL

Volume 2 – Provide a separate volume, four (4) copies and one (1) electronic copy (CD/DVD or flash drive), for the price proposal and any amendments thereto.

Volume 2 should be prepared simply and economically and be legible, clear, and coherent. Each section of Volume 2 should be individually tabbed as set forth below.

6.1 Business Proposal

6.1.1 Tab A: Corporate Profile And Financial Information

This information considers the Offeror's organization and financial capability. Provide a corporate profile and a copy of the latest three (3) years of audited corporate financial statements.

Joint Ventures/Teams

Clearly describe any teaming or joint venture arrangements, including a clear description of each firm's roles and responsibilities on the project. A copy of the Joint Venture/Team (JV/Team) agreement(s) shall be provided. Include a simple organizational chart, illustrating the project organization, including the proposed quality control group(s). Present a matrix of responsibilities for each firm in executing the key work breakdown structure activities of the project. Describe the proposed management structure for the JV/Team, describing how the construction process will be managed, and the authorities and delegations of authority within the JV/Team. Include a key personnel organization chart that clearly depicts the key positions and the names of the personnel, their firm affiliations, their job locations, and their job/position title within the organization. The key personnel organization chart shall be consistent with the corporate organization chart.

6.1.2 Tab B: Offeror Representations and Certifications

Complete:

1. AMS Form 009, Representations and Certifications – Procurement Specific
2. AMS Form 010, Representations and Certifications – Supplier Information

6.1.3 Tab C: Bonds

Pursuant to the bond requirements set forth in Article 6 of Enclosure 1, Attachment A: “BSA General Terms and Conditions for NSLS-II Conventional Construction,” submit a letter of commitment from a surety, signed by an officer or agent authorized to bond, that identifies the Offeror’s available bonding capacity and the limits that the surety will bond the Offeror, as the successful awardee for this project. The surety must appear on the Department of Treasury Circular 570, “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and Acceptable Reinsuring Companies.” The Offeror must show satisfactory bonding capacity and access to a surety listed on the Department of the Treasury’s Circular 570 for at least the amount stated in its offer. **This is a GO/NO GO factor in determining the acceptability of an Offeror’s proposal.**

In addition, offers shall be accompanied by an offer guarantee in the amount of \$3,000,000. The bond must be accompanied by a copy of the agent’s authority to sign bonds for the surety company.

Alternatively, Offerors shall furnish a separate bond, or United States bonds or Treasury notes or a certified or bank check in the proper amount by the time set for the opening of offers. Failure to do so may be cause for rejection of the offer. BSA will return notes or certified or bank checks to: (1) unsuccessful Offerors as soon as practicable after the evaluation of offers, and (2) the successful Offeror upon execution of contractual documents and the submission of acceptable payment and performance bonds.

Bonds shall be submitted on Enclosure 3, AMS Form 017: Bid Bond Form.

If the successful Offeror, upon acceptance of its offer by BSA within the period specified for acceptance, fails to execute all contractual documents or submit payment and performance bonds as required by the solicitation within the time specified, BSA may terminate the contract for default.

In the event the contract is terminated for default, the Offeror is liable for any cost of acquiring the work that exceeds the amount of its offer. The bonds or notes of the United States shall be made available to offset the difference.

Within fourteen (14) days after receipt of award, the successful Offeror shall furnish two bonds, each with satisfactory security; namely, a performance bond and a payment bond. Article 6 of the General Terms and Conditions for NSLS-II Conventional Construction provided with the Request for Proposal describes the bonding requirements in more detail. BSA will supply the bond forms to the successful Offeror. Only these forms will be acceptable.

6.2 Tab D: Price and Options

6.2.1 Base Price for Ring Building Construction

Enclosure 6 – NSLS-II Proposal Pricing Sheets are to be utilized to provide a price for the construction of the National Synchrotron Light Source II Ring Building. Proposal pricing shall be broken out using the Construction Specifications Institute (CSI) format set forth below:

Division

01 - General requirements	\$ _____
02 - Site construction	\$ _____
03 - Concrete	\$ _____
04 - Masonry	\$ _____
05 - Metals	\$ _____
06 - Wood & Plastics	\$ _____

07 - Building protection	\$ _____
08 - Doors & Windows	\$ _____
09 - Finishes	\$ _____
10 - Specialties	\$ _____
11 - Equipment	\$ _____
12 - Furnishings	\$ _____
13 - Special construction	\$ _____
14 - Conveying systems	\$ _____
15 - Mechanical system	
a. Controls	\$ _____
b. HVAC	\$ _____
c. Plumbing	\$ _____
d. Fire protection	\$ _____
e. Process piping and equipment	\$ _____
f. Site utilities	\$ _____
g. Other	\$ _____
16 - Electrical systems	
a. Lighting, conduit and wire	\$ _____
b. Power distribution, conduit and wire	\$ _____
c. Fire alarm, conduit and wire	\$ _____
d. Communication and security, conduit and wire	\$ _____
e. Site electrical utilities	\$ _____
e. Other	\$ _____
 TOTAL Ring Building Price	 \$ _____

6.2.2 Amendments

Offerors shall acknowledge receipt of all RFP amendments as part of their price proposal, giving number and date of each.

6.2.3 Options

Due to budgetary constraints, BSA requires Offerors to price optional work items in addition to the base configuration. Provide a price for all labor, services, materials, tools, equipment and required bonding needed to complete construction of each option below. **Failure to provide a price for all optional items requested will result in the proposal being considered deficient. BSA reserves the right to exercise any, all or none of the options below. Options will be exercised at the time of contract award based on available funds. Unexercised options expire with contract award.**

Option No. 1 - Provide Bypass Corridor between Cols A2 and A16 (LOBs 1, 2)

Option No. 2 - Provide Second 15kv Feeder- Substation 2 to Bldg 603 (Redundant Feeder)

- Option No. 3 - Provide 30 Tunnel Wall Shield Doors
- Option No. 4 - Provide Ln2 & Gn2 Piping and Electrical Utilities (Beamline Utilities)
- Option No. 5 - Provide Four-Foot High Clerestory Windows
- Option No. 6 - Provide Bypass Corridor between Cols A26 and A40 (LOB 2, 3)
- Option No. 7 - Provide Bypass Corridor between Cols A50 and A64 (LOB 3, 4)
- Option No. 8 - Provide Acoustic Metal Roof Panels
- Option No. 9 - Provide Acoustic Wall Panels - 80 locations
- Option No. 10 - Provide Building Siding Enclosure at LOBs 1, 4, and 5

7.0 SOURCE SELECTION BOARD/SOURCE SELECTION OFFICIAL

The SSB has been established to conduct the evaluation of proposals received in response to this solicitation. The evaluation will be based on the content of the proposal, proposal modifications and any information obtained from other sources, e.g., past performance information. The SSB will not consider any proposal documents incorporated by reference. Identities of SSB members are confidential and members will not be available for contact or discussion. The SSB will evaluate the proposals and assign a consensus rating for each evaluation factor and sub-factor. The SSB will recommend to the Source Selection Official, the Offeror that represents the “Best Value” taking into consideration both technical capabilities and price. The Source Selection Official will consider the SSB recommendation and after review of all applicable documents and offers will make a final decision as to the successful Offeror providing the Best Value to BSA.

8.0 EVALUATION AND BASIS FOR AWARD

8.1 Evaluation

The SSB will rate each proposal against the specified evaluation criteria set forth in the RFP requirements. The SSB will not compare proposals at this time. After all proposals are rated, the SSB will compare the ratings and relative strengths and weaknesses of each proposal. The SSB will support each rating with a narrative, separately listing all strengths or advantages, weaknesses or disadvantages, deficiencies, and required clarifications. **Price will not be rated or scored, but will be a significant factor in the Best Value analysis.**

The tradeoff process permits tradeoffs among price and non-price factors (i.e. Technical Factors) and allows BSA to accept other than the lowest priced proposal, or other than the highest technically rated offeror. Under a tradeoff process, the perceived technical benefits of the higher priced proposal shall merit the additional cost in order to receive award. In conducting the tradeoff analysis for this procurement, the Technical Factors, when combined, are more important than price. Offerors are advised, however, that as the range of the overall Technical scores among offerors narrows, the more important price will become in making the award decision.

Options will not be part of the proposal evaluation process. BSA shall only use the base price proposed for the tradeoff determination. Options will not be reviewed until after a successful offeror has been chosen under the tradeoff process. Once the successful offeror has been chosen, BSA will then review the options to determine which, if any, options it will exercise and include in the contract award.

Additionally, inasmuch as the successful Offeror will construct the project for a firm fixed-price, the evaluation will focus on whether the proposed pricing accurately reflects the value of the construction proposals. BSA reserves the right to reject any offer if the base price exceeds BSA’s budget to complete the work.

8.2 Basis for Award

- (a) BSA intends to award a contract resulting from this RFP to the responsible Offeror whose proposal represents the best value after evaluation in accordance with the factors and sub-factors in the solicitation. Best value is a process for selecting the most advantageous offer by evaluating

and comparing all relevant factors in addition to price so that the overall combination that best serves the interest of BSA is selected.

- (b) BSA may reject any or all proposals if such action is in BSA's interest.
- (c) BSA may waive informalities and minor irregularities in proposals received.
- (d) BSA intends to evaluate proposals and may award a contract without discussions with Offerors. Therefore, the Offeror's initial proposal should contain the Offeror's best terms from a cost or price and technical standpoint. BSA reserves the right to conduct discussions if BSA determines them to be necessary. If BSA determines that the number of proposals that would otherwise be in the competitive range exceeds the number at which an efficient competition can be conducted, BSA may limit the number of proposals in the competitive range to the greatest number that will permit an efficient competition among the most highly rated proposals.
- (e) Exchanges with Offerors after receipt of a proposal do not constitute a rejection or counteroffer by BSA.
- (f) BSA may determine that a proposal is unacceptable if the prices proposed are materially unbalanced. Unbalanced pricing exists when, despite an acceptable total evaluated price, the price of one or more of the divisions set forth in Section 6.2 of this solicitation is significantly overstated or understated as indicated by the application of price analysis techniques. A proposal may be rejected if BSA determines that the lack of balance poses an unacceptable risk to BSA.
- (g) A written contract award shall be furnished to the successful Offeror within the time specified in the proposal and shall result in a binding contract.
- (h) If a post-award debriefing is given to requesting unsuccessful Offerors, BSA shall disclose the following information, if applicable:
 - (1) BSA's evaluation of the significant weak or deficient factors in the debriefed Offeror's offer.
 - (2) The overall evaluated price and contractor proposal rating of the successful and the debriefed Offeror and past performance information on the debriefed Offeror.
 - (3) The overall ranking of all Offerors, when any ranking was developed by BSA during source selection.
 - (4) A summary of the rationale for award.

9.0 INSURANCE

Within fourteen (14) days after receipt of award, the Offeror to whom award is made shall submit Certificates of Insurance with the coverages indicated in Article 13 of Enclosure 1, Attachment A: "BSA General Terms and Conditions for NSLS-II Conventional Construction." The certificate must show that Brookhaven Science Associates, LLC and the U.S. Government are named as additional insureds and that the insurance carrier will give BSA thirty (30) days prior written notice in the event of cancellation or material change in the policy.

Pursuant to Article 13 (d) of Enclosure 1, Attachment A, BSA General Terms and Conditions for NSLS-II Conventional Construction," the Contractor shall be responsible for establishing and maintaining a Contractor Controlled Insurance Program. Insurance coverages shall be procured and maintained by the Contractor for eligible subcontractors and lower tier subcontractors while performing work at the NSLS-II project jobsite.

10.0 SMALL BUSINESS SUBCONTRACTING PLAN

If the successful Offeror has certified that it is a large business, a Small Business Subcontracting Plan must be submitted for BSA's approval prior to contract award. The plan, and instructions for completing it, is included in the proposal documents. Firms certifying that they are small businesses need not complete the plan.

The following small business goals are applicable to this procurement.

Small business	46.4%
Small disadvantaged Business	6.3%

Women-Owned Business	5.8%
Hub Zone	3.0%
Veteran-Owned Business	3.0%
Service Disabled Veteran-Owned Business	3.0%

11.0 ON-SITE EMERGENCY OCCUPATIONAL MEDICAL PERSONNEL AND FACILITIES

Pursuant to Article 43 (l) of Enclosure 1, Attachment A, “BSA General Terms and Conditions for NSLS-II Conventional Construction,” the Contractor shall, during normal working hours, provide a competent emergency health professional within the worksite being duly complemented by adequate medical supplies, equipment and facilities.

The services of a full time health professional (Registered Nurse, Licensed Practical Nurse, or Physician’s Assistant) will be required when the total number of workers is fifty (50) or more.

12.0 SUBSTANCE ABUSE PROGRAM

Pursuant to Article 9 (d) of Enclosure 1, Attachment A, “BSA General Terms and Conditions for NSLS-II Conventional Construction,” the Contractor shall establish and maintain a compliant workplace drug and alcohol testing program consistent with BSA’s substance abuse program as set forth in the BSA model Environment, Safety and Health Plan, Enclosure 1: Attachment F.

13.0 CERTIFICATIONS

During the course of the work, the Contractor will be required to submit the following to BSA’s Contractual Representative.

1. Weekly certified payrolls for both its own work force and that of subcontractors.
2. Copeland Statement of Compliance for both its own work force and that of all subcontractors.
3. A Release of Claims against BSA and the Government at the completion of the work.

14.0 EEO/AFFIRMATIVE ACTION

BSA is responsible for determining whether the successful Offeror appears to be able to comply with the provisions of Executive Order No. 11246, as amended, relating to Equal Employment Opportunity. An E.E.O. compliance review will be conducted with the successful Offeror prior to contract award. Review the clauses entitled Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction (FAR 52.222-23), and Affirmative Action Compliance Requirements for Construction (FAR 52.222-27), incorporated by reference in Enclosure 1, Attachment A, Article 17, Labor Standards, of the “General Terms and Conditions for NSLS-II Conventional Construction.” The successful Offeror shall be required to complete a Statement of Acknowledgment that prescribed labor flow down clauses are understood and will be included in all its subcontracts at any tier. A sample has been provided as Enclosure 4 to this RFP.

15.0 PHASE FUNDING

This project will be funded over four (4) fiscal years. The amount obligated at award is Twenty Five Million USD (\$25,000,000.00). It is anticipated that additional funds will be obligated as follows: a. FY 2010 Eighty Million USD (\$80,000,000); b. FY 2011 Sixty Million USD (\$60,000,000); FY 2012, the balance will be obligated.

16.0 DAVIS-BACON REQUIREMENTS

This is a prevailing wage contract. Payment of wages to contract employees, including subcontract employees, shall be at rates not less than those contained in the wage determination included in the RFP. The requirements of FAR 52.222-5 Davis-Bacon Act—Secondary Site of the Work (Jul 2005) will apply to covered off site work.

BSA will make periodic site visits to interview individual workers to ensure the requirements of the Davis–Bacon Act are being met. Enclosure 1, Attachment A, Article 17 of the Terms and Conditions covers the labor aspects of this contract.

17.0 ENCLOSURES

Enclosure 1 - BSA Sample Contract

Attachment A - BSA General Terms and Conditions for NSLS-II Conventional Construction

Attachment B - Davis – Bacon General Decision: NY080013 09/19/2008 NY13

Attachment C – Specification SPC-CF-CI-FAC-001 for NSLS-II dated September 26, 2008

Attachment D - Drawings dated September 26, 2008

Attachment E - Small Business Subcontracting Plan

Attachment F - BSA Model Environmental Safety and Health Plan

Enclosure 2 - Offeror Representations and Certifications

1. AMS Form 009, Representations and Certifications – Procurement Specific

2. AMS Form 010, Representations and Certifications – Supplier Information

Enclosure 3 - AMS Form 017: Bid Bond Form

Enclosure 4 - SF 1413 – Statement and Acknowledgement

Enclosure 5 - Instructions for Obtaining NSLS-II Plans and Specifications

Enclosure 6 - NSLS-II Proposal Pricing Sheets

BSA believes the information contained herein is sufficient to permit your company to prepare a complete and definitive proposal; however, should you have any questions, please contact the undersigned. All questions must be submitted in writing; replies to questions will be provided in writing and, if considered to be of general interest, will be transmitted to all other Offerors.

Sincerely,



David J. Paveglio
Contracts Administrator

Page Intentionally Left Blank

Enclosure 1 - BSA Sample Contract

Page Intentionally Left Blank

Buyer	Amount	Contract Number
D. Pavaglio	\$	7700000004

BROOKHAVEN NATIONAL LABORATORY

Brookhaven Science Associates
Upton, L.I., N.Y. 11973-5000

Contractor

CONTRACT

This is a Contract (the "Contract") between the party above named (the "Contractor") and Brookhaven Science Associates, LLC ("BSA"), the latter acting under Prime Contract No. DE-ACO2-98CH10886 with the United States of America (the "Government") represented by the United States Department of Energy ("DOE"):

I. Scope of Work

Furnish all labor, services, materials, tools, plant and equipment required to complete construction of the Conventional Facilities for National Synchrotron Light Source II Ring Building in strict accordance with BSA Specification SPC-CF-CI-FAC-001 dated September 26, 2008 and the drawings listed therein.

This award is made for Ring Building Base Offer + [Options - if applicable]

II. Deliverables and Recurring Reports

In addition to the required contract deliverables set forth in Attachment C – Specification LT-SPC-CF-CI-FAC-001 for NSLS II dated September 26, 2008, the following reports shall be submitted.

Report

Certified Payrolls for contractor and subcontractor work forces.

Schedule

Weekly

Copeland Statement of Compliance for both of its own work-force and that of all subcontractors.

Weekly

Release of Claims against BSA and the Government

Completion of the work.

Small Business Sub-Contracting

Individual Subcontracting Report
Summary Subcontracting Report

Mar 31st & Sept 30th Annually
Sept 30th Annually & Contract Completion

III. Period of Performance

This Contract shall be effective as of the date executed by BSA provided that the Contractor executes the Contract without exception or alteration. Substantial Completion of the entire Construction Work shall be achieved no later than April 30, 2012.

The contractor shall schedule and perform the work in a manner that meets the milestones for specified portions of the work. To the extent specified below, interim milestones shall be achieved as follows:

Milestones	Substantial Completion
Pentant 1- Ready for Beneficial Occupancy	1-Feb-2011
Pentant 5 - Ready for Beneficial Occupancy	23-Mar-2011
RF Building - Ready for Beneficial Occupancy	18-May-2011
Pentant 2 - Ready for Beneficial Occupancy	2-Jun-2011
Pentant 3 - Ready for Beneficial Occupancy	27-Sep-2011
Injection Building - Ready for Beneficial Occupancy	28-Nov-2011
Pentant 4 - Ready for Beneficial Occupancy	9-Feb-2012
Ring Building Construction Complete	30-Apr-2012

IV. Price and Payment

- A. **Firm Fixed Price:** In full consideration of the Contractor's performance hereunder Brookhaven shall pay the Contractor the firm fixed price of XXXXXXXXXXXX USD (\$XXX,XXX,XXX.XX). The said sum shall constitute full compensation for all services and materials furnished hereunder.
- B. **Obligation of Funds:** This project will be funded over four (4) fiscal years. The amount obligated at award is Twenty Five Million USD (\$25,000,000.00). It is anticipated that additional funds will be obligated as follows: a. FY 2010 Eighty Million USD (\$80,000,000); b. FY 2011 Sixty Million USD (\$60,000,000); FY 2012, the balance will be obligated. The contractor must notify BSA's Procurement and Property Management (PPM) Division when the amount due the contractor from BSA reaches 85% of the funds obligated to the contract for a funding period (including potential termination costs). At that time, the contractor must also notify BSA's Procurement and Property Management Division of any need for additional funds over the obligated amount. The contractor shall perform work only up to the point at which the amount of funds currently obligated to this contract is exhausted. The Contractor shall not exceed the obligated funds without authorization of BSA's Procurement and Property Management Division. BSA is not obligated to pay or reimburse the Contractor for any expenditure in excess of the obligated amount.
- C. **Payment:** Progress Payments are available under this contract. Payment will be made pursuant to Article 20 – Payment, Attachment A.

All payment requests shall contain a copy of record documents required under Specification Section 1.12 - Record Document Submittals for work included in the payment request.

Progress Payment Requests for the period ending March 31st of each year shall include a copy of the completed Individual Subcontracting Report.

Progress Payment Requests for the period ending September 30th of each year shall

include a copy of the completed Individual Subcontracting Report and Summary Subcontracting Report.

All material and work covered by progress payments, made as hereinbefore provided shall become the sole property of the Government of the United States, but this provision shall not be construed as relieving the Contractor from full responsibility for all materials and work upon which payments have been made or the restoration of any work damaged prior to receipt and acceptance by BSA or as a waiver of the right of BSA to require the fulfillment of all terms of this Contract. Furthermore, it is understood that these progress payments are only tentative payments, and that upon any termination under this Contract, shall be repaid at once, if, and as requested by BSA (subject to any other specific provision of this Contract regarding payments to the Contractor in the event of termination); title to any material covered by such repayments shall revert in the Contractor.

Payment shall be made on receipt and approval of properly certified invoices that set forth the amount and Contract number. Invoices shall be submitted in duplicate to: Brookhaven National Laboratory, Fiscal Division, Accounts Payable-Contracts Section, Bldg. 400D, Upton, NY 11973 with a copy to BSA's Contract Representative, D. Paveglio, Brookhaven National Laboratory, Bldg. 830M, Upton, NY 11973. In addition, the Contractor shall indicate the final invoice by clearly marking such invoice as "FINAL".

V. **Authorized Representatives**

- A. **BSA Technical Representative:** XXXXX of the NSLS II Project Office, located in Building 817, is BSA's technical representative, hereunder. He shall act as liaison between BSA and the Contractor in technical matters only. He can be reached at (631) 344-XXXX, or email: XXXX@bnl.gov.
- B. **BSA Contractual Representative:** David Paveglio, located in Building No. 830M, is BSA's Contractual representative. He can be reached at (631) 344-8461, email: dpavegli@bnl.gov. Any change or modification in the terms and conditions of this Contract shall require the written approval of BSA's Procurement and Property Management Division's Manager, or his designee.
- C. **BSA NSLS-II ES&H Manager:** XXXXX, located in Building No. 830M, is BSA's NSLS-II ESH Manager. He can be reached at, XXX-XXX-XXXX, email: xxx@bnl.gov. He shall act as liaison between BSA and the Contractor in environmental, safety and health matters only.
- D. **Contractor Technical Representative:** XXXXX is the Contractor's authorized technical representative, hereunder. He shall act as point of contact between BSA and the Contractor in technical matters. He can be reached at XX Contractor's authorized contractual representative, hereunder. He shall act as liaison between BSA and the Contractor. He can be reached at XXX-XXX-XXXX or email: xxx@xxx.com.

VI. Key Project Personnel

- A. The personnel listed below are considered essential to the work being performed under this contract. Before removing, replacing, or diverting any of the listed personnel, the Contractor must: (1) Notify BSA’s contractual representative in writing; (2) submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on this contract; and (3) obtain BSA’s written approval. Notwithstanding the foregoing, if the Contractor deems immediate removal or suspension of any member of its management team is necessary to fulfill its obligation to maintain satisfactory standards of employee competency, conduct, and integrity, the Contractor may remove or suspend such person at once, although the Contractor must notify BSA prior to or concurrently with such action.
- B. BSA retains the right to require removal of contractor personnel whose actions, while assigned to this contract, clearly conflict with BSA’s interests. The reason for removal shall be fully documented in writing by BSA. When such removal occurs, BSA and the Contractor shall mutually agree upon an expedient timeframe for assigning qualified replacement personnel to the resulting vacancy.
- C. The list of personnel may, with the consent of the contracting parties, be amended from time to time during the course of the contract to add or delete personnel.

<u>Name</u>	<u>Position</u>
X	Project Manager
X	Project Superintendent
X	Project Safety Manager

VII. Terms and Conditions

The Terms and Conditions applicable to this procurement are Brookhaven Science Associates, LLC, BSA General Terms and Conditions for NSLS-II Conventional Construction, Attachment A.

VIII. Referenced Documentation

The following are incorporated in this Contract. The Order of Precedence for determining any inconsistencies shall be in accordance with Article 2 of Enclosure 1, Attachment A - BSA General Terms and Conditions for NSLS-II Conventional Construction.

Attachment A - BSA General Terms and Conditions for NSLS-II Conventional Construction

Attachment B - Davis – Bacon General Decision: NY080013 09/19/2008 NY13

Attachment C – Specification SPC-CF-CI-FAC-001 for NSLS II dated September 26, 2008

Attachment D - Drawings dated September 26, 2008

Attachment E - Approved Small Business Subcontracting Plan

Attachment F - Approved Contractor Health and Safety Plan

This Contract does not bind nor purport to bind the Government of the United States.

ACCEPTED:

CONTRACTOR

BROOKHAVEN SCIENCE ASSOCIATES, LLC

By _____

By _____

Title _____

Title

Date _____

Date _____

Two copies of this Contract, executed by BSA have been provided. Should you accept this Contract without exception or alteration, one copy of the Contract executed by both parties shall be returned to BSA's Contractual Representative. Should you take any exceptions or attempt to alter the Contract in any manner, BSA's execution thereof shall be null and void. Should you wish to take exception(s)/alteration(s), you shall notify BSA's Contractual Representative. BSA will consider the requested exception(s)/alteration(s) and notify you accordingly. No contract shall exist unless and until such differences are resolved. The Contractor shall sign and return one (1) **copy of this Contract** to the attention of David J. Pavoglio, Procurement & Property Management, Building 830M Upton, NY 11973.

Page Intentionally Left Blank

Attachment A - BSA General Terms and Conditions for NSLS-II Conventional Construction

Page Intentionally Left Blank

**BROOKHAVEN SCIENCE ASSOCIATES, LLC
GENERAL TERMS AND CONDITIONS
FOR NSLS-II CONVENTIONAL CONSTRUCTION
AT
BROOKHAVEN NATIONAL LABORATORY**

Article 1.	Definitions.....	2
Article 2.	Order of Precedence.....	2
Article 3.	Complete Agreement	2
Article 4.	Assignment.....	2
Article 5.	Independent Contractor; Hold Harmless	2
Article 6.	Performance and Payment Bond Requirements	3
Article 7.	Compliance with Laws and Regulations.....	3
Article 8.	Compliance with Environmental, Safety, Health, and Traffic Regulations.....	3
Article 9.	Drug-Free Workplace.....	4
Article 10.	Hazardous Material Identification and Material Safety Data Sheets.....	5
Article 11.	Reporting of Accidents.....	6
Article 12.	Inspection of Vehicles and Materials	6
Article 13.	Insurance	6
Article 14.	Contractor’s Responsibilities.....	7
Article 15.	Superintendence by the Contractor	8
Article 16.	Suspect/Counterfeit Items.....	8
Article 17.	Labor Standards.....	9
Article 18.	Notice Regarding Labor Disputes	9
Article 19.	Notice Regarding Late Performance	9
Article 20.	Payment	10
Article 21.	Taxes.....	11
Article 22.	Changes.....	11
Article 23.	Notification of Claims and Documentation	11
Article 24.	Determining Costs of Changes	12
Article 25.	Extras	12
Article 26.	Material and Workmanship	12
Article 27.	Subcontractors	13
Article 28.	Inspection of Construction.....	13
Article 29.	Warranty of Construction.....	14
Article 30.	Existing Conditions.....	15
Article 31.	Differing Site Conditions	15
Article 32.	Suspension of Work.....	15
Article 33.	Time for Performance and Delays.....	16
Article 34.	Disputes	17
Article 35.	Applicable Law.....	18
Article 36.	Termination for Default.....	18
Article 37.	Termination for Convenience	18
Article 38.	Whistleblower Protection for Contractor Employees	19
Article 39.	Bankruptcy.....	19
Article 40.	No Waiver.....	19
Article 41.	Patent Indemnity – Subcontracts.....	20
Article 42.	Clauses Incorporated by Reference	20
Article 43.	Compliance with 10 CFR 851 and Brookhaven Science Associates’ Work Safety and Health Program by Integration of Environment, Safety, and Health into Work Planning and Execution	21
Article 44.	Safety Incentive	25
Article 45.	Identification of Employees.....	29

ATTACHMENT A
BROOKHAVEN SCIENCE ASSOCIATES, LLC
GENERAL TERMS AND CONDITIONS
FOR NSLS-II CONVENTIONAL CONSTRUCTION
AT
BROOKHAVEN NATIONAL LABORATORY

Article 1. Definitions

The following terms shall have the meanings below:

- (a) "BSA" means Brookhaven Science Associates, LLC acting under Prime Contract No. DE-AC02-98CH10886 between BSA and the Government for the operation of Brookhaven National Laboratory, and includes the successor to, or any duly authorized representative of BSA.
- (b) "Contractor" means any person or organization that has entered into this Agreement with BSA.
- (c) "Government" means the United States of America and includes the U.S. Department of Energy (DOE) or any duly authorized representative(s) thereof.
- (d) "Brookhaven," "BNL," and "the Laboratory" mean the Brookhaven National Laboratory site at Upton, New York.
- (e) "BSA's PPM Division" means the BSA Procurement and Property Management Division (PPM) person responsible for contractual matters.
- (f) "Agreement" means contract, Basic Ordering Agreement (BOA), Task Agreement, and any modifications thereto, including all contract documents. It includes without limitation the specifications, drawings, the General Terms and Conditions, and any special or supplemental terms and conditions, when incorporated into this agreement by reference or otherwise.
- (g) "Contract Documents" means all documents that comprise this Agreement, including, without limitation, the specifications, drawings, the General Terms and Conditions, and any special or supplemental terms and conditions, when incorporated into this Agreement by reference or otherwise.

Article 2. Order of Precedence

In the event of an inconsistency among provisions of this Agreement, the inconsistency shall be resolved by giving precedence in the following order: (a) the text of this Agreement, (b) General Terms and Conditions, (c) the Specifications, and (d) the Drawings, if incorporated in this Agreement by reference or otherwise.

Article 3. Complete Agreement

This Agreement expresses the entire Agreement and understanding of the parties with respect to the subject matter hereof and supersedes any prior oral and written agreements between the parties. It may only be modified in writing executed by both BSA and the Contractor.

Article 4. Assignment

The Contractor shall not assign its rights and/or obligations hereunder to third parties without BSA's prior written consent. However, the Contractor may assign its rights to be paid amounts due or to become due under this Agreement to a financing institution if BSA is promptly furnished written notice and a signed copy of such assignment. This Agreement is assignable by BSA to the Government or to a successor contractor to operate Brookhaven National Laboratory. The Contractor agrees to look solely to the Government or to such successor contractor for payment of the part so assigned, and to execute a novation agreement so recognizing the successor contractor if requested to do so by BSA.

Article 5. Independent Contractor; Hold Harmless

- (a) In conducting the work hereunder the Contractor is acting in the capacity of an independent contractor and is not an agent or employee of BSA and/or the Government. However, BSA shall

have the right to control the general direction of the work, within the limits of the specifications, and the parties agree that such direction shall not constitute a change to this Agreement. Nothing contained in this Agreement or any lower-tier subcontract shall create any contractual relationship between any such lower-tier subcontractor and BSA. The Contractor is solely responsible for its actions and those of its subcontractors, agents and/or employees.

- (b) The Contractor will defend, hold harmless and indemnify the Government and BSA and their respective officers, agents and employees from and against any and all liability, including all losses and damages and any expense connected therewith arising out of or connected with the work, excepting only liability arising from affirmative acts, done with intent to cause loss, damage or injury, by BSA, the Government or the officers, agents or employees of either.
- (c) The Contractor's obligations under this clause shall not be limited by any legal limitation on the amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefit acts or other employee benefit acts.
- (d) The Contractor's liability insurance shall provide coverage for the Contractor's obligations under this clause in accordance with the Article on Insurance.

Article 6. Performance and Payment Bond Requirements

- (a) Within fourteen (14) days after contract award, and before commencing work, the Contractor shall furnish performance and payment bonds in the amounts described below with a surety company holding a certificate of authority from the Secretary of the Treasury (see Department of the Treasury Circular 570). The bonds shall be submitted on the forms provided by BSA. In lieu of a payment or performance bond, the Contractor may furnish a certified check payable to BSA in the amount of one hundred percent (100%) of the bond amount.
 - (i) *Performance Bond*: 100% of the contract price;
 - (ii) *Payment Bond*: 100% of the contract price
- (b) Performance bonds shall remain effective until the warranty period under the *Warranty of Construction* Article has expired, and payment bonds shall remain effective until final payment under the *Payment* Article.
- (c) After commencing work, BSA may require the Contractor to furnish additional security to protect BSA, the Government, and persons supplying labor or materials under this Agreement if any bond furnished becomes unacceptable or the contract price is increased so that the penal sum of any bond becomes inadequate in the opinion of BSA's PPM Division.

Article 7. Compliance with Laws and Regulations

The Contractor shall comply with all applicable federal, state, and local laws and ordinances and all pertinent lawful orders, rules and regulations, including those applicable by reason of the fact that this Agreement is issued under a prime contract with the Government. Such compliance is a material requirement of this Agreement. The Contractor is responsible for obtaining any necessary licenses and/or permits without additional expense to BSA. The Contractor warrants that each chemical substance constituting or contained in supplies furnished under this Agreement is on the list of substances published by the Administrator of the Environmental Protection Agency pursuant to the Toxic Substances Control Act as amended.

Article 8. Compliance with Environment, Safety, Health, and Traffic Regulations

- (a) The Contractor shall take all reasonable precautions to protect the environment and the safety and health of employees and the public in the performance of work hereunder. The Contractor shall comply with the rules and regulations set forth in BSA's Safety Program, Contractor Orientation Program, all applicable OSHA standards, BSA's ES&H Standards, Security Protocols and NY State Vehicle and Traffic Laws.
- (b) The consumption or unauthorized possession of alcoholic beverages is prohibited in all areas of the BNL site. Personnel who consume alcohol off-site or found in possession of alcoholic beverages shall be restricted from entering BNL.

- (c) All contractor personnel that may be working on or near energized electrical equipment (as defined in BNL's Electrical Safety subject area: <https://sbms.bnl.gov/sbmsearch/subjarea/192/192sa.cfm?parentID=192> must provide objective evidence to BSA's Work Control Coordinator/Manager or designee of having satisfactorily completed electrical safety training that meets the requirements of NFPA 70E prior to performing work on site to assure awareness of the hazards and safety-related work practices.
- (d) If the Contractor fails to comply with said regulations or requirements, BSA may issue an order stopping all or any part of the work hereunder, without prejudice to any other legal or contractual rights BSA may have. A start order, for resumption of the work, may be issued at BSA's discretion. The Contractor shall make no claim for an extension of time or for compensation or damages by reason of, or in connection with, such work stoppage.
- (e) BSA reserves the right to charge back to the Contractor actual costs incurred by BSA directly or indirectly to perform safety inspections, complete paperwork, investigate and prepare occurrence reports as a result of the Contractor's failure to comply with said regulations or requirements. A non-negotiable unilateral deduct change order will be issued to the Contractor, and punitive penalties may be assessed to individuals by dismissing them from the Brookhaven site based on the extent of the noncompliance.
- (f) BSA will evaluate the Contractor on its safety performance, including that of its subcontractors. The number and severity of safety and security violations, including traffic violations, will be considered in this evaluation. Repeated and/or willful violations are cause for termination for default and may affect the Contractor's opportunity to bid on future work at BNL.

Article 9. Drug-Free Workplace

- (a) Definitions. As used in this clause--
 - § "Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.
 - § "Conviction" means a finding of guilt (including a plea of *nolo contendere*) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.
 - § "Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession, or use of any controlled substance.
 - § "Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.
 - § "Employee" means an employee of a Contractor directly engaged in the performance of work under this Agreement.
 - § "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.
 - § "Individual" means a Contractor that has no more than one employee including the Contractor.
- (b) Within 30 days after award (unless a longer period is agreed to in writing by BSA's PPM Division, or as soon as possible for contracts of less than 30 days performance duration), the Contractor shall:
 - (1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited on the Brookhaven site and specifying the actions that will be taken against employees for violations of such prohibition;
 - (2) Establish an ongoing drug-free awareness program to inform such employees about (i) the dangers of drug abuse in the workplace; (ii) the Contractor's policy of maintaining a drug-free workplace; (iii) any available drug counseling, rehabilitation, and employee assistance

- programs; and (iv) the penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;
 - (4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this Agreement, the employee will (i) abide by the terms of the statement; and (ii) notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction;
 - (5) Notify the BSA Contractual Representative in writing within 10 days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;
 - (6) Within 30 days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace: (i) taking appropriate personnel action against such employee, up to and including termination; or (ii) require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and
 - (7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.
- (c) In addition to other remedies available to BSA, the Contractor's failure to comply with the requirements of paragraph (b) of this clause may render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension from award of further BSA contracts.
- (d) **SUBSTANCE ABUSE PROGRAM**
- (1) Program Implementation. The Contractor shall, consistent with BSA's Alcohol and Substance Abuse Program, as defined in Section 6.19 of the BSA Model ES&H plan , maintain a compliant workplace drug and alcohol testing program.
 - (a) All Contractor employees coming into a construction area are subject to testing.
 - (2) Remedies. In addition to any other remedies available to BSA, the Contractor's failure to comply with the requirements of this Article and perform in a manner consistent with this Article may render the Contractor subject to the suspension of contract payments and/or termination for default.
 - (3) Subcontracts
 - (a) The Contractor agrees to notify BSA reasonably in advance of, but not later than 5 days prior to, the award of any subcontract the Contractor believes may be subject to the requirements of the BSA Program.
 - (b) The Contractor shall require all subcontractors to implement a Workplace Substance Abuse Program that complies with the requirements of the BSA Program as a condition for award of the subcontract.
 - (c) The Contractor agrees to include, and require the inclusion of, the requirements of this clause in all subcontracts, at any tier.
 - (4) Compliance. BSA shall monitor the Contractor's implementation of the program for effectiveness and compliance with this Article.

Article 10. Hazardous Material Identification and Material Safety Data Sheets

With or before each delivery, the Contractor shall submit a Material Safety Data sheet, as prescribed in 29 CFR 1910.1200 and the latest version of Federal Standard No. 313, for all hazardous material delivered under this Agreement which will involve exposure to hazardous materials or items containing these materials, whether or not it is listed in Appendix A of the Standard. As used in this Article, "hazardous

material” is as defined in the latest version of Federal Standard No. 313, including revisions adopted during the term of this Agreement.

Article 11. Reporting of Accidents

All incidents involving illness/injury or property damage shall be immediately reported to the Contractor’s Project Superintendent. The Contractor’s Project Superintendent shall immediately notify the NSLS-II Environmental Safety and Health (ES&H) Manager and ensure that the accident scene and relevant evidence found therein is adequately protected from alteration.

Investigations shall be conducted for all events that result in either an OSHA reportable, or OSHA recordable event, or result in a Days Away Restricted or Transferred (DART) case. Such incidents will be investigated by the Contractor’s Project Safety Manager or designee in conjunction with the NSLS-II ES&H Manager or designee, and documented on an Incident Investigation Report. The report must be completed and submitted to the Contractors Project Manager and NSLS-II Project Manager within 24 hours of the incident. BSA reserves the right to conduct an independent investigation of any incident, and must be granted access to the injured party to conduct interviews. The USDOE also reserves the right to conduct an independent investigation of any incident.

An incident investigation committee will investigate all major incidents. This includes, but is not limited to, any incident resulting in a medical case, lost-time injury, fatality, or significant damage to property or equipment. The committee will review the incident scene, interview all involved or witnessing parties, review all facts pertaining to the accident, and file a report of the findings and conclusions as well as recommended measures to prevent recurrence to the Contractor’s Project Manager. The committee shall be comprised of, but not limited to:

- the person(s) involved in the incident,
- the first-line supervisor of the person(s) involved in the incident,
- the superintendent of the employing contractor,
- the NSLS-II Safety Engineer or designee,
- the Contractor’s Project Safety Manager or designee, and
- other personnel deemed appropriate by the Contractor and the NSLS II ES&H Manager.

Article 12. Inspection of Vehicles and Materials

(a) All vehicles removing materials from anywhere on the Brookhaven site must pass through the unmanned Vehicle Radiation Monitoring System (VRMS) before and after the materials are loaded. If radioactive materials are detected, the driver shall immediately notify BSA by calling the number indicated on the VRMS telephone. The VRMS is located on the north side of Princeton Avenue between Upton Road and Weaver Drive.

(b) A vehicle found to contain radioactive material may not leave the Brookhaven site until the material is identified and removed. Only vehicles carrying radioactive materials that are properly packaged and labeled in accordance with U.S. Department of Transportation regulations are exempt from this procedure. Materials removed from known radiological areas must be monitored in accordance with the applicable provisions of the procedure entitled Radiological Surveys required for Release of Material from Areas Controlled for Radiological Purposes , found at:

<https://sbms.bnl.gov/SBMSearch/ld/ld19/ld19d081.doc>

(c) BSA reserves the right to inspect and search vehicles entering or leaving the site.

Article 13. Insurance

(a) The Contractor shall, at no cost to BSA, maintain policies providing the following insurance protection, which insurance shall apply to all operations of the Contractor hereunder and employees of the Contractor engaged therein. Unless waived in writing by BSA’s PPM Division,

the Contractor shall also provide an endorsement to its liability policies either (i) naming Brookhaven Science Associates, LLC and the U.S. Government as additional insureds or (ii) insuring the Contractor's obligations under the paragraph hereof entitled "Independent Contractor; Hold Harmless."

- (1) *Worker's Compensation* – Coverage as provided in the Worker's Compensation Law of the State having jurisdiction, including occupational disease coverage for limits of \$1,000,000 per person in any one case and additional Employees Liability of \$1,000,000 per occurrence.
- (2) *General Liability* – Insurance with limits of \$1,000,000/\$2,000,000 for bodily injury liability and \$100,000 for property damage liability in the comprehensive liability form.
- (3) *Automobile Liability* – Insurance with limits of \$250,000/500,000 for bodily injury liability and \$50,000 for property damage liability in the comprehensive policy form.
- (b) The Contractor may purchase such additional or other insurance protection, as it may deem necessary, at its own expense.
- (c) The Contractor shall furnish BSA's PPM Division a certificate of insurance to show compliance with paragraph (a) above. The insurance certificate shall be submitted within fourteen (14) days of award and prior to issuance of a Notice to Proceed. The Contractor shall also ensure that such certificate states that the insurance carrier(s) will give BSA 30 days prior written notice if there is any cancellation or material change in such policies. The Contractor shall also ensure that such certificates are kept up to date during the period of contract performance.
- (d) The Contractor is responsible for establishing and maintaining a Contractor Controlled Insurance Program. Insurance coverages shall be procured and maintained by the Contractor for eligible subcontractors and lower tier subcontractors while performing work at the NSLS II project job site. In addition to coverages set forth in section (a), the following additional coverages are required.

Excess Liability Insurance:

(1) Limits of Liability:

Contract Size	Minimum Limit Required (Per Occurrence/Aggregate)
Up to \$2,499,999	\$1,000,000/\$1,000,000
\$2,500,000 - \$4,999,999	\$2,000,000/\$2,000,000
\$5,000,000 - \$7,499,999	\$3,000,000/\$3,000,000
\$7,500,000 and over	\$4,000,000/\$4,000,000

(2) Coverages and Terms:

- (i) Occurrence Policies
- (ii) Excess of General Liability
- (iii) Excess of Employer's Liability
- (iv) Completed Operations

Builder's Risk Insurance

"All Risk" Builder's Risk insurance covering the entire work at the project site for the full insurable value of the work, including transit thereto and including materials stored off-site and destined to become a part of the Work. Such insurance shall be for the term of construction. No deductible shall exceed \$5,000.

Article 14. Contractor's Responsibilities

The Contractor is responsible for all damages to persons or property that occur, as a result of the Contractor's fault or negligence. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of

work which may have been accepted under this Agreement. The Contractor's responsibility shall apply to activities of the Contractor, its agents, lower-tier subcontractors, and employees.

Article 15. Superintendence by the Contractor

At all times during performance of this Agreement and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent from its organization who is satisfactory to BSA and has authority to act for the Contractor.

Article 16. Suspect/Counterfeit Items.

"Suspect Items" are items for which there is an indication by visual inspection, testing, or other information that it may not conform to established Government or industry-accepted specifications or national consensus standards. "Counterfeit Items" are suspect items that are a copy or substitute without legal authority to do so or whose material, performance, or characteristics are knowingly misrepresented by the supplier, distributor, or manufacturer. Forms of misrepresentation include, but are not limited to, the following:

- § falsified product sources (counterfeits);
- § falsified or modified quality assurance records;
- § false marking as to class, type, or grade;
- § mixing of unmarked materials with marked materials;
- § false labeling as to qualification or acceptance by testing/certifying organizations; and used and/or refurbished products misrepresented as new products.

Types of materials, parts, and components known to have been misrepresented include, but are not limited to:

- § lifting materials such as slings, hooks, cables, and shackles;
- § threaded fasteners fraudulently marked as high-strength bolts;
- § refurbished electrical circuit breakers sold under false certifications;
- § valves;
- § piping and piping components;
- § electrical devices;
- § channel members, plate, bar, and flanges;
- § and other structural items.

See the Exhibits in the BNL [Suspect / Counterfeit Items](https://sbms.bnl.gov/sbmsearch/subjarea/72/72_SA.cfm), Subject Area

https://sbms.bnl.gov/sbmsearch/subjarea/72/72_SA.cfm

for more information on identifying suspect/counterfeit items. S/CIs may pose immediate and potential threats to the safety of BSA and contractor workers, the public, and the environment. Failure of a safety or mission critical system due to an S/CI could also have security implications at DOE facilities.

- § Items furnished to BSA under this Agreement shall not include suspect/counterfeit parts nor shall such parts be used in performing any work under this Agreement whether on or off the Laboratory site.
- § If suspect/counterfeit parts are furnished under this Agreement and are found on the Laboratory site, such parts shall be impounded by BSA or they shall be removed by the Contractor as directed by BSA. The Contractor shall promptly replace such parts with supplies acceptable to BSA and the Contractor shall be liable for all costs relating to impoundment, removal, and replacement. BSA may turn such parts over to the U.S. Office of the Inspector General for investigation and reserves the right to withhold payment pending the outcome of any investigation.

§ The rights of BSA in this clause are in addition to any other rights provided by law or under this Agreement.

Article 17. Labor Standards.

The following provisions apply to work performed under this Agreement as if they were set forth herein in their entirety. For more information on clauses incorporated by reference see the Article entitled *Clauses Incorporated by Reference*.

<i>Clause</i>	<i>FAR Reference</i>
Davis-Bacon Act (Jul 2005)	52.222-6
Withholding of Funds (Feb 1988)	52.222-7
Payrolls and Basic Records (Feb 1988)	52.222-8
Apprentices and Trainees (Jul 2005)	52.222-9
Compliance with Copeland Act Requirements (Feb 1988)	52.222-10
Subcontracts (Labor Standards) (Jul 2005)	52.222-11
Contract Termination – Debarment (Feb 1988)	52.222-12
Compliance with Davis-Bacon and Related Act Regulations (Feb 1988)	52.222-13
Disputes Concerning Labor Standards (Feb 1988)	52.222-14
Certification of Eligibility (Feb 1988)	52.222-15
Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction (Feb 1999)*	52.222-23
Affirmative Action Compliance Requirements for Construction (Feb 1999)	52.222-27

*For purposes of the Notice, the “covered area” is Suffolk County, New York. The goals for minority and female participation, expressed in percentage terms for the Contractor’s aggregate workforce in each trade on all construction work in the covered area (5380 Nassau-Suffolk, New York), are as follows:

Goals for Minority Participation for Each Trade	5.8%
Goals for Female Participation for Each Trade	6.9%

These goals are applicable to all of the Contractor’s construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the *Federal Register* in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

Article 18. Notice Regarding Labor Disputes

- (a) If the Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this Agreement, the Contractor shall immediately give notice, including all relevant information, to BSA’s PPM Division.
- (b) The Contractor agrees to insert the substance of this clause, including this paragraph (b) in any subcontract hereunder, except that each subcontract shall provide that required notice be given to the next higher tier subcontractor, or the Contractor, as the case may be of all relevant information with respect to such dispute(s).

Article 19. Notice Regarding Late Performance

If the Contractor encounters difficulty in meeting performance requirements, or anticipates difficulty in complying with the delivery schedule or date, the Contractor shall immediately notify BSA’s PPM

Division in writing, giving pertinent details, including the date by which it expects to complete performance or make delivery. This data shall be informational only, and BSA's receipt of this notice shall not be construed as a waiver of any schedule or date, or any rights or remedies provided by law or under this Agreement.

Article 20. Payment

- (a) Within fourteen (14) days after award, the Contractor shall submit a Schedule of Values broken down as required in the Supplementary Conditions, Section 0800, of the Specifications, which will provide a basis for determining progress payments. The Schedule of Values will be subject to BSA's approval.
- (b) BSA will make progress payments against the contract price on a monthly basis, or at more frequent intervals as determined by BSA's PPM Division, as the work proceeds. If BSA disagrees with the percentage complete of any item included in an invoice, it shall confer with the Contractor, but if agreement cannot be reached BSA shall authorize payment as it determines is appropriate and the Contractor may submit a Claim for the difference in accordance with the Disputes Article. Each application for payment shall be accompanied by the following signed certification:

“The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the work covered by this application for payment has been completed in accordance with the Contract Documents, and that all work for which previous payments have been received is free and clear of liens, claims, security interests or encumbrances of any kind. The Contractor further warrants that title to all work covered by this application for payment will pass to the Government no later than the time of payment.”

- (c) In making such progress payments, BSA shall retain 10% of the estimated amount until final completion and acceptance of the work. However, if BSA's PPM Division determines that the Contractor has achieved satisfactory progress during any period for which a progress payment is to be made, BSA's PPM Division may authorize such payment to be made either with a reduced retention or in full without retention. Also, when the work is substantially complete, BSA shall retain an amount it considers adequate to protect BSA and the Government, and at its discretion, may release all or a portion of any excess amount to the Contractor. Furthermore, on completion and acceptance of each separate building or other division of the contract on which this agreement states a separate price, payment may be made therefore without retention of a percentage.
- (d) All equipment, material and work covered by progress payments made shall thereupon become the sole property of the Government, but this shall not be construed as: (1) relieving the Contractor from the sole responsibility for all equipment, material and work upon which payments have been made or the restoration of any damaged work, or (2) waiving BSA's rights to require fulfillment of all this Agreement's terms.
- (e) BSA shall reimburse the Contractor the total premiums paid to obtain the payment and performance bonds. This reimbursement shall be made at one time together with the first progress payment otherwise due after the Contractor has –
 - (1) furnished the bonds (including the coinsurance and reinsurance agreements, when applicable),
 - (2) furnished evidence of full payment to the surety company, and
 - (3) submitted a request for such payment.
- (f) BSA's reimbursement of the bond premiums shall not be made as increments of the individual progress payments and shall not be in addition to the contract price.
- (g) On completion and acceptance of all work hereunder and presentation of a properly executed invoice, BSA shall pay the Contractor the Contract Price, less progress payments made provided

the Contractor shall have first furnished BSA a Release of Liens from all subcontractors, together with a release by the Contractor of all claims against BSA and the Government arising by virtue of this Agreement, other than claims in stated amounts as may be specifically excepted by the Contractor from the operation of the release. If the Contractor's claim to amounts payable under this Agreement has been assigned to a bank, trust company, or other institution, including a Federal lending institution, a release may also be required of the assignee. BSA may withhold from any final payment the amount of any Claim it has against the Contractor arising out of the contract work, provided it has first given the Contractor notice of the Claim and the amount for which BSA believes the Contractor is liable.

Article 21. Taxes

This Agreement's price includes all applicable Federal, State and local taxes and duties. In determining the applicability of any tax or duty, due consideration shall be given to the relationship of the subject matter of this Agreement to the Government, and the fact that BSA is exempt from New York State and local sales and use taxes under Exempt Organization Certificate No. EX-216880.

Article 22. Changes

- (a) At any time, without notice to the sureties, BSA may, by written notice designated as a change order, make changes within the general scope of this Agreement, including but not limited to changes: (1) in the specifications (including drawings and designs), (2) in the method and/or manner of performance, (3) in the Government-furnished facilities, equipment, materials, services, or site; or (4) directing acceleration in performance.
- (b) NSLS-II's inspectors may issue field change orders up to \$5,000. Such change orders must be in writing and signed by the authorized inspector or project coordinator and the Contractor. All field change orders must be incorporated into this Agreement by a formal amendment prior to contract completion.
- (c) Except as herein provided, no order, statement, or conduct of BSA's technical representative shall be treated as a change under this article or entitle the Contractor to an equitable adjustment hereunder. If the Contractor considers that any direction or instruction by BSA's technical personnel constitutes a change other than an authorized field change order as described in Paragraph (b) above, the Contractor shall not rely on such direction or instruction without obtaining written confirmation from BSA's Contractual Representative.
- (d) If any properly authorized change causes a difference in the cost or the time required for performance, BSA shall make an equitable adjustment in the price and/or delivery schedule and other affected provisions. Such adjustment shall be made by written amendment to this Agreement signed by both parties. The Contractor must assert any claim for adjustment within 30 days from the date it receives BSA's change notice; however, BSA may, in its sole discretion, receive and act on any claim for adjustment at any time before final payment. Failure to agree to any adjustment shall be settled in accordance with the *Disputes* article of these General Terms and Conditions. Nothing in this clause, including any disagreement with BSA about the equitable adjustment, shall excuse the Contractor from proceeding with work hereunder, as changed.
- (e) When costs are a factor in any determination of a price adjustment pursuant to this clause or any provision of this Agreement, such cost shall be in accordance with the cost principles and procedures in FAR Subpart 31 and DEAR Subpart 931.

Article 23. Notification of Claims and Documentation

- (a) A Claim is a written demand by one party for an interpretation of terms, adjustment to the contract price or adjustment to the time in which to perform the Contract. A Claim may arise from, without limitation, issues concerning the acceptability of work, progress of work, differing site conditions, ambiguities or defects in the Contract Documents and whether work the Contractor is performing is included in this Agreement. The Contractor shall give BSA's contractual representative written notice no later than 5 days prior to beginning any work that it

believes constitutes a change to the work required by or time in which to perform this Agreement; and expressly waives the right to make any Claim pertaining thereto if it fails to give this required notice. Unless a provision of this Agreement expressly provides for more or less time, the Contractor shall give BSA notice of all other Claims within 14 days of the time the condition giving rise to the Claim first becomes known to the Contractor. A Claim is known to the Contractor provided it is known to the project superintendent or any foreman reporting to the superintendent. The Contractor shall include the requirements of this clause in all subcontracts and purchase orders and BSA shall not be liable for any Claim of any subcontractor or supplier that has failed to comply with this notification provision.

- (b) A Claim shall provide complete documentation, including:
 - 1. the Contractor's certification, by its owner or an officer, under penalty of perjury, that (i) the Claim is made in good faith, (ii) supporting data are accurate and complete to the best of the Contractor's and subcontractor's (if applicable) knowledge and belief, and (iii) the amount requested accurately reflects the Contract adjustment for which the Contractor believes the Owner is liable;
 - 2. full disclosure of facts and detailed reasons supporting the Claim with citations to relevant provisions in the Contract Documents; and
 - 3. complete documented cost of doing the work for which the Claim is being made.
- (c) BSA will make a final decision on all Claims prior to the date of final payment. BSA's decision will be in writing, will be consistent with the intent of the Contract Documents, and will cite the basis on which it is made. BSA's decision is a condition precedent to proceeding in the manner set forth in the Disputes Article. BSA's decision shall be final and binding on the Contractor unless the Contractor, within 30 days following receipt of BSA's decision, notifies BSA's PPM in writing that it intends to proceed under the Disputes Article. Failure to provide such notice shall constitute a waiver of the Claim(s), and the Contractor shall thereafter indemnify and hold harmless BSA from any and all liability arising out of or relating to such Claim(s).

Article 24. Determining Costs of Changes

An equitable adjustment shall be determined as follows:

- (a) Unit Prices. To the extent additions to or deletions from the contract work are subject to unit prices agreed upon in this Agreement, those unit prices shall be applied in determining the equitable adjustment and the Contractor shall not be entitled to any other costs or profit.
- (b) Allowable costs shall be limited to costs of direct labor, including foreman engaged in the work but not the Superintendent or other field personnel; costs of materials, supplies and equipment, exclusive of portable or hand tools; costs of premiums for bonds and insurance; the increased or decreased costs of field overhead, including superintendence, but only if the change affects the Contractor's critical path of construction activities; the costs of any tiered subcontractor's work computed in accordance with this Article, provided that the mark-up charged by the Contractor and its subcontractors for home office overhead and profit shall be subject to negotiation but in no event shall it exceed 15 percent of the direct costs of the work performed and 5 percent for work performed by subcontractors at lower tiers. When both additions and deletions are related and pertain to the same work item, the mark-up for overhead and profit shall be computed on the net increase or decrease.

Article 25. Extras

Except as otherwise provided in this Agreement, BSA shall not pay for extras unless such extras and the price for them have been authorized in writing by BSA's PPM Division.

Article 26. Material and Workmanship

- (a) All equipment, material, and articles incorporated into the work covered by this Agreement shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Agreement. References in the specifications to equipment, material, articles, or

patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may use any equipment, material, article, or process that, in BSA's judgment, is equal to that named in the specifications, unless otherwise specifically provided in this Agreement. Unless otherwise agreed, modifications due to use of "or equal" supplies are at the Contractor's expense. If required by BSA, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment furnished under this Agreement.

- (b) The Contractor shall obtain BSA's approval of the machinery and mechanical and other equipment to be incorporated into the work. When required by this Agreement or by BSA, the Contractor shall also obtain BSA's approval of the material or articles which the Contractor contemplates incorporating into the work. When so directed, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.
- (c) The Contractor shall be responsible to BSA and each of its officers, employees, agents and consultants for the acts and omissions of the Contractor's employees, subcontractors and their agents and employees, and other persons performing portions of the work under a contract with the Contractor.
- (d) All work under this Agreement shall be performed in a skillful and workmanlike manner. BSA may require, in writing, that the Contractor remove from the work any employee BSA deems incompetent, careless, or otherwise objectionable.

Article 27. Subcontractors

- (a) BSA reserves the right to approve or disapprove Subcontractors without change in the contract price. All proposed Subcontractors shall be submitted for approval. No later than two (2) weeks after signing this Agreement, the Contractor shall submit directly to BSA's technical representative for approval, a list, consistent with the project schedule, of proposed Subcontractors. Each Subcontractor's OSHA DART Rate and OSHA Recordable Incident Rate for each of the most recent three years for which data is available shall be less than the current published OSHA incidence rates for construction in their trade. Subcontractors shall also have an Insurance Experience Modification Rating (EMR) equal to or less than one (1). Submit OSHA 300 Logs and Insurer's EMR rating for verification by BSA.
- (b) Agreements between the Contractor and subcontractors and suppliers shall: (1) include all terms and conditions, to include any insurance requirements, that the Contractor is required to flow down to its subcontractors and suppliers by the terms of these Contract Documents; and (2) at BSA's option, provide for the assignment of subcontracts to BSA in the event of termination of this Agreement.

Article 28. Inspection of Construction

- (a) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed hereunder conforms to the contract requirements. The Contractor shall maintain complete inspection and test records and make them available to BSA. All work shall be conducted under the general direction of BSA and is subject to BSA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with this Agreement's terms.
- (b) BSA inspections and tests are for its sole benefit and do not relieve the Contractor of responsibility for providing adequate quality control measures, relieve the Contractor of responsibility for damage to or loss of the material before acceptance, constitute or imply acceptance, or affect BSA's continuing rights after acceptance of the completed work.
- (c) The presence or absence of a BSA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification

without the written authorization of BSA's PPM Division, except as permitted under the *Changes Article*, paragraph (b).

- (d) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by BSA. BSA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. BSA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in this Agreement.
- (e) The Contractor shall, without charge, replace or correct work BSA finds does not conform with this Agreement's requirements, unless in its own or the Government's best interest BSA consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (f) If the Contractor does not promptly replace or correct rejected work, BSA may replace or correct the work and charge the cost to the Contractor, or terminate this Agreement for default.
- (g) If, before acceptance of the entire work, BSA decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, BSA shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (h) Unless otherwise specified in this Agreement, BSA shall accept or reject, as promptly as practicable after completion and inspection, all work required by this Agreement or that portion of the work BSA determines can be accepted separately.

Article 29. Warranty of Construction

- (a) In addition to any other warranties in this Agreement, the Contractor warrants, except as provided in paragraph (h) of this article, that work performed under this Agreement conforms to the contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any subcontractor or supplier at any tier.
- (b) This warranty shall continue for a period of 1 year from the date of final acceptance of the work. If BSA takes beneficial occupancy of any part of the work before acceptance, this warranty shall continue for a period of 1 year from the date BSA takes possession through beneficial occupancy.
- (c) The Contractor shall remedy any failure to conform, or any defect at its own expense. In addition, the Contractor shall remedy any damage to Government-owned or BSA-controlled real or personal property at the Contractor's expense, when that damage is the result of the Contractor's failure to conform to contract requirements, or any defect of equipment, material, workmanship, or design furnished by the Contractor.
- (d) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for 1 year from the date of repair or replacement.
- (e) BSA shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.
- (f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, BSA shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this Agreement, the Contractor shall:
 - (1) obtain all warranties that would be given in normal commercial practice;
 - (2) require all warranties to be executed, in writing, for the benefit of BSA, as directed; and

- (3) enforce all warranties for BSA's benefit, as directed.
- (h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Contractor agrees to subrogate any of its rights and to aid BSA in enforcing lower-tier subcontractor's, manufacturer's, or supplier's warranties.
- (i) BSA's rights and remedies under this article are in addition to any other rights and remedies provided by law or under this Agreement.

Article 30. Existing Conditions

- (a) The Contractor represents that its representatives have visited the site and become familiar with existing and local conditions, which may affect the work and has included all costs associated therewith in its Proposal.
- (b) If information on subsurface soil conditions was obtained for design purposes, the Contractor may rely on the boring logs as a representation of soils that existed at the location of the boring at the time the borings were made, but may not rely on the interpretations or opinions contained in the report nor on the completeness of adequacy of the information for the Contractor's construction purposes.
- (c) The Contractor shall be responsible for:
 - (1) verifying the existence and location of all utilities and underground facilities, including the use of potholing, hand excavations and hand demolitions;
 - (2) coordinating work with BSA's Modernization Project Office;
 - (3) protection of concealed and underground utilities and underground facilities from damage;
 - (4) the repair or replacement of utilities or underground facilities damaged by the Contractor's failure to exercise reasonable care; and
 - (5) damage to others due to loss of utility service resulting from the Contractor's operations.

Article 31. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to BSA of: (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this Agreement, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in this agreement.
- (b) BSA shall investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this Agreement, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause and this Agreement modified in writing accordingly.
- (c) No Claim by the Contractor for an equitable adjustment under this Article shall be allowed unless the Contractor has given the written notice required by this Article and otherwise complied with the Notification of Claims and Documentation Article.

Article 32. Suspension of Work

- (a) At any time, BSA's PPM Division may, by written notice to the Contractor, require the Contractor to suspend, delay or interrupt all or any portion of the work hereunder for such period as BSA determines appropriate. On receipt of such notice, the Contractor shall immediately comply with its provisions and take all reasonable steps to minimize the incurrence of costs associated with such suspension as directed by BSA's PPM Division.
- (b) If BSA suspends, delays or interrupts performance of all or any part of the work hereunder for an unreasonable period of time, an adjustment shall be made for any increase in the cost of performance of this Agreement (excluding profit) necessarily caused by such unreasonable suspension, delay or interruption, and this Agreement will be modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay or interruption to the extent –

- (1) that performance would have been so suspended, delayed or interrupted by any other cause, including the fault or negligence of the Contractor, or
 - (2) for which an equitable adjustment is provided for or excluded under any other provision of this Agreement.
- (c) As full compensation for such unreasonable delay, the Contractor shall be reimbursed reasonable and allowable actual costs, without duplication, to the extent the cost resulted solely and directly from the unreasonable period of the suspension. Claim for such reimbursement shall be submitted within 14 calendar days after the suspension is terminated. A claim under this article shall not be allowed unless the claim, in an amount stated, is submitted timely.

Article 33. Time for Performance and Delays

- (a) This project is to be considered as one where “**time is of the essence.**” The contract completion and all milestone dates shall be adhered to. An unexcused failure to be “substantially complete” by the completion date could lead to disqualification from future projects.
- (b) Definition of Terms
1. *Contract Time* is the period of time including authorized adjustments allowed for completion of the work and is measured from the date of contract award to the date of final completion.
 2. *Day* is a calendar day beginning and ending at midnight.
 3. *Unusual Weather* is defined as when either the number of Wet Days or the number of Freezing Days exceeds the most recently published mean number of Wet or Freezing Days for the period of record, for the same month and for the weather observing station closest to the project site as reported in “Comparative Climatic Data” published by the National Oceanic and Atmospheric Administration. “Wet Days” are defined as days that have at least 0.01 inch of rainfall unless modified elsewhere in this Agreement. “Freezing Days” are defined as days with a minimum temperature of 32 degrees F or lower.
 4. *Excusable Delay* means unforeseeable delay beyond the Contractor or BSA’s control and not resulting from Contractor’s fault or negligence. Excusable Delay includes labor disputes, fire, Unusual Weather, unavoidable casualties, and unusual delays in transportation.
- (c) Computation of Time. Any period of time referred to in the Contract Documents measured in days shall mean consecutive calendar days and shall exclude the first and include the last day. If the last day falls on a Saturday, Sunday or legal holiday, it shall be omitted from the calculation.
- (d) Contract Time. The Contractor confirms that the Contract Time is a reasonable period for performing the Work and includes enough float time to allow for normal unfavorable weather and other reasonably anticipated delays.
- (e) Damages for Late Completion. BSA reserves the right to assess the Contractor for actual damages suffered by BSA as a result of completion after the Contract Time. These damages may include, but are not limited to, BSA’s cost for inspection and project management for the period beyond the contract completion date.
- (f) Commencing Work. The Contractor shall not commence work (1) prior to the date in the Notice to Proceed, (2) prior to giving BSA’s technical representative 5 days written notice.
- (g) Accelerated Work If Required to Meet Schedule. The Contractor shall proceed expeditiously with adequate forces and shall achieve all milestones and Final Completion pursuant to the schedule set forth in the contract. If the Contractor’s performance falls behind schedule, the Contractor shall accelerate the work as required to get back on schedule at no additional cost to BSA. Accelerated work shall include air or express delivery of materials and equipment, increasing the number of workers, working overtime, working Saturdays, Sundays and holidays, and working additional shifts. The Contractor shall pay BSA for any extra costs of inspection made necessary by accelerated work required under this provision.
- (h) Excusable Delays. The Contractor shall be entitled to an extension of Contract Time due to an Excusable Delay if it can show that the Excusable Delay is the sole and unavoidable cause increasing the time actually needed to complete the Work. The Contractor shall not be entitled to an increase in Contract Price due to an Excusable Delay.

- (j) **Compensable Delays.** The Contractor shall be entitled to an extension of Contract Time and an adjustment in Contract Price in accordance with the Determining Costs of Changes Article due to unreasonable delays that are not due to the fault or neglect of the Contractor and which could not have been reasonably anticipated, including delays: (1) caused by BSA or by BSA's separate contractors or workers, (2) resulting from BSA's failure to provide access to lands or rights-of-way on which the Work is to be performed, or (3) due to suspension of the work ordered by BSA. In making such a Claim, the Contractor must demonstrate that the delay was the sole and unavoidable cause for increasing the length of time required to complete the Work. For purposes of settlement of Claims under this paragraph, no mark-up for profit will be allowed.

Article 34. Disputes

- (a) **Good Faith Negotiation.** The parties agree that they will attempt in good faith to resolve through negotiation any dispute, claim or controversy arising out of or relating to this Agreement. Either party may initiate negotiations by providing written notice in letterform to the other party, setting forth the subject of the dispute and the relief requested. The recipient of such notice agrees to respond in writing within five (5) days with a statement of its position on and recommended solution to the dispute. If the dispute is not resolved by this exchange of correspondence, then representatives of each party with full settlement authority will meet at a mutually agreeable time and place within fifteen (15) days of the date of the initial notice in order to exchange relevant information and perspectives, and to attempt to resolve the dispute. If the dispute is not resolved by these negotiations, the matter will be submitted to JAMS, or its successor, for mediation, following the procedure described in subparagraph (b), below. Pending settlement or a final judgment, the Contractor will proceed diligently with performance of this Agreement according to the instructions of BSA's contractual representative.
- (b) **Mediation.** Except as provided in this Agreement, the parties agree that neither will commence any civil action with respect to any dispute, claim or controversy arising out of or relating to this Agreement until the matter has been submitted to **JAMS (45 Broadway, 28th Floor, New York, NY 10006, 212-751-2700)**, or its successor, for mediation and that process has been completed. Either party may commence mediation by providing to JAMS and the other party a written request for mediation, setting forth the subject of the dispute and the relief requested. The parties agree to cooperate with JAMS and with one another in selecting a mediator from JAMS panel of neutrals, and in scheduling the mediation proceedings. The parties covenant that they will participate in the mediation in good faith, and that they will share equally in its costs. The parties further agree that they will treat as confidential all offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the parties, their agents, employees, experts and attorneys, and by the mediator and any JAMS employees. The parties also agree that they will treat any such communications as privileged and inadmissible for any purpose, including impeachment, in any litigation or other proceeding involving the parties, provided that evidence that is otherwise admissible or discoverable will not be rendered inadmissible or non-discoverable as a result of its use in the mediation. Either party may seek equitable relief prior to the mediation to preserve the status quo pending the completion of that process. Except for such an action to obtain equitable relief, neither party may commence a civil action with respect to the matters submitted to mediation until after the completion of the initial mediation session, or 45 days after the date of filing the written request for mediation, whichever occurs first. Mediation may continue after the commencement of a civil action, if the parties so desire. The provisions of this Article may be enforced by any Court of competent jurisdiction, and the party seeking enforcement will be entitled to an award of all costs, fees and expenses, including attorneys fees, to be paid by the party against whom enforcement is ordered.
- (c) **Waiver of Right to Litigate in Court Before Completing Negotiation and Mediation and Waiver of Right to Jury Trial and Designation of Court Sitting in the State of New York.** The Contractor agrees to submit all disputes, claims or controversies arising out of or relating to this Agreement to negotiation and then mediation as described above before bringing any action

in court. The Contractor further acknowledges that, in the event it brings any such action in court, that it will bring that action in a court sitting in the State of New York, and it further acknowledges that it is hereby waiving any right that it might possess to demand a jury trial for the litigation of that action. The Contractor further acknowledges that it is giving up any rights to judicial remedies and procedures to the extent that this Agreement does not specifically provide for them. The Contractor further acknowledges that its agreement to this provision for this contract is voluntary.

Article 35. Applicable Law

The parties agree that the Federal common law of government contracts will govern the construction and interpretation of this Agreement and all claims arising under or related to this Agreement or work performed under this Agreement or claims of breach of this Agreement, regardless of the forum in which any party to this Agreement brings action. For purposes of this Agreement, the Federal common law of government contracts will consist of the interpretation of contract clauses and the law enunciated and applied to government contracts by the Boards of Contract Appeals, the Comptroller General (CG), and Federal Courts having jurisdiction over the Boards or the CG. The term "Board of Contract Appeals" means those established under the Contract Disputes Act of 1978, 41 U.S.C. 607(a)(1), and their predecessor and successor bodies.

Article 36. Termination for Default

- (a) BSA may terminate this Agreement for default, in whole or in part, if the Contractor: (1) fails to supply enough properly skilled workers or materials so as to endanger timely performance; (2) abandons or unreasonably delays performance; (3) fails to comply with laws, safety or environmental regulations, ordinances or BSA instruction; (4) fails to comply with any substantive requirement of this Agreement; (5) fails to make payment to subcontractors or material suppliers; (6) becomes insolvent, commences any form of voluntary bankruptcy proceeding, has any petition or action filed against it under any bankruptcy code or law, makes a general assignment for the benefit of creditors, or if a trustee, receiver or agent is appointed under law to take charge of Contractor's property or operations for the benefit of creditors; (7) fails to retain a valid Contractor's license of the required class, or (8) otherwise commits a material breach of this Agreement. In this event, BSA shall not be liable for any services or supplies not accepted.
- (b) When any of the above reasons exist, and without prejudice to any other rights BSA may have, and after giving the Contractor and the Contractor's surety seven (7) days written notice, BSA may terminate the employment of the Contractor and, subject to any prior rights of the surety, BSA may: (1) take possession and use any materials, tools, equipment and the construction facilities and premises owned by the Contractor; (2) accept assignment of subcontracts pursuant to the Subcontractors Article and finish the work by whatever method BSA deems expedient.
- (c) If BSA terminates this Agreement for cause, the Contractor shall not be entitled to further payment until the work has been completed.
- (d) If the cost of completing the work, including additional engineering services, attorney's fees and administrative expenses made necessary thereby, exceeds the unpaid contract price, the Contractor shall pay the difference to BSA. This obligation for payment shall be binding after termination of this Agreement. If the cost of completing the work, including costs for engineering, legal, and administrative expenses is less than the unpaid contract price, the difference shall be paid to the Contractor to the extent that such payment was due the Contractor for completed work at the time of termination.
- (e) BSA's rights and remedies under this Article are in addition to any other rights and remedies provided by law or under this Agreement.

Article 37. Termination for Convenience

- (a) BSA reserves the right to terminate this Agreement, or any part hereof, for its convenience or that of the Government by delivering a written Notice of Termination specifying the extent of the

termination and its effective date. The Contractor shall immediately stop all work so terminated and shall immediately cause any and all of its affected suppliers and subcontractors to cease work and take any action that may be necessary, or that BSA directs, to protect the property related to this Agreement.

- (b) After termination, the Contractor shall submit a final termination settlement proposal to BSA in the form and with the certification prescribed by BSA. The Contractor shall submit the proposal promptly, but no later than 1 year from the effective date of termination, unless extended in writing by BSA on the Contractor's written request within this 1-year period. If the Contractor fails to submit the proposal within the time allowed, BSA may determine, on the basis of information available, the amount, if any, due the Contractor as a result of the termination and shall pay the amount determined.
- (c) Subject to the terms of this Agreement, the Contractor shall be paid a percentage of the price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges that the Contractor can demonstrate to BSA's satisfaction, have resulted from the termination. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided. The Contractor and BSA may agree on the amount to be paid because of the termination; however, the agreed amount may not exceed the contract price.
- (d) BSA shall exclude from the amounts payable to the Contractor the fair value, as determined by BSA, of property that is destroyed, lost, stolen, or damaged so as to become undeliverable.
- (e) The cost principles and procedures of Part 31 of the Federal Acquisition Regulation (FAR) as modified by Part 931 of the Department of Energy Acquisition Regulation (DEAR), in effect on the date of this Agreement, shall govern all costs claimed.
- (f) Unless otherwise agreed or required by statute, the Contractor shall maintain all records and documents relating to the terminated portion of this Agreement for 3 years after final settlement. This includes all books and other evidence bearing on the Contractor's costs and expenses under this Agreement. The Contractor shall make these records and documents available to BSA and the Government, at the Contractor's office, at all reasonable times, without any direct charge. If approved by BSA, authentic reproductions may be maintained instead of original records and documents.

Article 38. Whistleblower Protection for Contractor Employees

- (a) The Contractor shall comply with the requirements of the *DOE Contractor Employee Protection Program* at 10 CFR Part 708 for work performed on behalf of DOE directly related to activities at DOE owned or leased sites.
- (b) The Contractor shall insert or have inserted the substance of this clause, including this paragraph (b) in subcontracts at all tiers, for subcontracts involving work performed on behalf of DOE directly related to activities at DOE owned or leased sites.

Article 39. Bankruptcy

If the Contractor enters into any proceeding relating to bankruptcy, it shall give written notice to BSA's PPM Division via certified mail within 5 days of initiating the proceedings. The notification shall include the date on which the proceeding was filed, the identity and location of the court and a listing, by BSA contract number, of all BSA contracts for which final payment has not been made.

Article 40. No Waiver

BSA's failure to enforce any of the provisions of this Agreement shall not be construed as evidence to interpret the requirements of this Agreement, nor a waiver of any requirement, nor a waiver of BSA's right to enforce each and every provision. All rights and obligations of the parties shall survive final performance of this Agreement.

Article 41. Patent Indemnity – Subcontracts

The Contractor shall indemnify BSA and the Government and their officers, agents, and employees against liability, including costs, for infringement of U.S. Letters Patent (except Letters patent issued upon an application which is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government) for any work the Contractor performs under this Agreement.

Article 42. Clauses Incorporated by Reference

This Agreement incorporates the following Federal Acquisition Regulation (FAR) and Dept of Energy Acquisition Regulation (DEAR) clauses by reference with the same force and effect as if they were in full text. The FAR clauses are available through the General Services Administration at <http://www.arnet.gov/far/> and the DEAR clauses are available at <http://www.management.energy.gov/DEAR.htm>, or they may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. Whenever necessary to make the context of the clauses applicable to this Agreement, the term “Contractor” shall mean the Contractor, the term “Contract” shall mean this Agreement, and where noted or where necessary to derive proper meaning in a subcontract situation the terms “DOE”, “Government” and “Contracting Officer” shall mean BSA, except the terms “DOE”, “Government” and “Contracting Officer” do not change: (1) in the phrases “Government Property,” “Government-Furnished Property,” “Government Equipment,” and “Government-Owned Equipment,” or where otherwise intended that title ownership or rights are to remain with the Government; or (2) where statute or regulation vests authority exclusively in specific agencies or officials; or (3) where otherwise specifically modified in this Agreement. However, except in clauses FAR 52.227-1, “Authorization and Consent” and “Alternate I; FAR 52.227-2, “Notice and Assistance Regarding Patent and Copyright Infringement, FAR 52.227-14, “Rights in Data-General” , FAR 52.227-16, “Additional Data Requirements, FAR 52.227-17, “Rights in Data-Special Works”, FAR 52.227-23, “Rights to Proposal Data (Technical)”, DEAR 952.227-11, “Patent Rights Retention by the Contractor (Short Form)” DEAR 952.227-13, “Patent Rights Acquisition by the Government”, and DEAR 970.5227-1, “Rights in Data-Facilities, in which clauses “Government” shall mean the U. S. Government and “Contracting Officer” shall mean the DOE Contracting Officer for Prime Contract DE-AC02-98CH10886 with Brookhaven Science Associates, LLC., (BSA).

Article	Title of Clause	FAR/DEAR Ref.
Article 42.1	Covenant Against Contingent Fees (Apr 1984)	52.203-5
Article 42.2	Contractor Code of Business Ethics and Conduct (Dec 2007)	52.203-13
Article 42.3	Display of Hotline Poster(s) (Dec 2007)	52.203-14
Article 42.4	Anti-Kickback Procedures (except subparagraph (c)(1)) (Jul 1995)	52.203-7
Article 42.5	Protecting the Government’s Interest when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (Sept 2006)	52.209-6
Article 42.6	Utilization of Small Business Concerns (May 2004)	52.219-8
Article 42.7	Prohibition of Segregated Facilities (Feb 1999)	52.222-21
Article 42.8	Equal Opportunity (Mar 2007)	52.222-26
Article 42.9	Equal Opportunity for Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans (Sept 2006)	52.222-35
Article 42.10	Affirmative Action for Workers with Disabilities (Jun 1998)	52.222-36
Article 42.11	Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans (Sept 2006)	52.222-37
Article 42.12	Combating Trafficking in Persons (Aug 2007)	52.222-50
Article 42.13	Energy Efficiency in Energy Consuming Products (Dec 2007)	52.223-15
Article 42.14	Buy American Act – Construction Materials (Jan 2005)	52.225-9
Article 42.15	Restrictions on Certain Foreign Purchases (Jun 2008)	52.225-13
Article 42.16	Rights to Proposal Data (Technical) (Jun 1987)	52.227-23
Article 42.17	Site Investigation and Conditions Affecting the Work (Apr 1984)	52.236-3

Article 42.18	Other Contracts (Apr 1984)	52.236-8
Article 42.19	Use and Possession Prior to Completion (Apr 1984)	52.236-11
Article 42.20	Specifications and Drawings for Construction (Feb 1997)	52.236-21
Article 42.21	Subcontracts for Commercial Items (Mar 2007)	52.244-6
Article 42.22	Government Property (Jun 2007)	52.245-1
Article 42.23	Use and Charges (Jun 2007)	52.245-9
Article 42.24	Sensitive Foreign Nations Control (Apr 1994)	952.204-71
Article 42.25	Patent Rights Retention by the Contractor (Short Form) (Feb 1995) (This clause applies only if the awardee is a domestic small business or domestic nonprofit organization at the time of award, and the award is for the conduct of research, development, or demonstration)	952.227-11
Article 42.26	Patent Rights Acquisition by the Government (Applicable to experimental, research & development, demonstration or design work) (Sep 1997)	952.227-13
Article 42.27	Refund of Royalties (Aug 2002)	970.5227-8
Article 42.28	Accounts, Records and Inspection (Sections A through H) (Jun 2007)	970.5232-3
Article 42.29	Restrictions on Subcontractor Sales to the Government (Sept 2006)	52.203-6
Article 42.30	Limitation on Payments to Influence Certain Federal Transactions (Sept 2007)	52.203-12
Article 42.31	Contract Work Hours and Safety Standards Act – Overtime Compensation (Jul 2005)	52.222-4
Article 42.32	Notification of Employee Rights Concerning Payment of Union Dues or Fees (Dec 2004)	52.222-39
Article 42.33	Toxic Chemical Release Reporting (Aug 2003)	52.223-14
Article 42.34	Authorization and Consent (Dec 2007)	52.227-1
Article 42.35	Notice and Assistance Regarding Patent and Copyright Infringement (Dec. 2007)	52.227-2
Article 42.36	Displaced Employee Hiring Preference (Jun 1997)	952.226-74
Article 42.37	Workforce Restructuring Under Section 3161 Of The National Defense Authorization Act For Fiscal Year 1993. (Dec 2000)	970.5226-2

The following clauses apply, if checked:

<input checked="" type="checkbox"/>	Article 42.38	Price Reduction for Defective Cost or Pricing Data – Modifications (Oct 1997)	52.215-11
<input checked="" type="checkbox"/>	Article 42.39	Subcontractor Cost or Pricing Data – Modifications (Oct 1997)	52.215-13
<input checked="" type="checkbox"/>	Article 42.40	Small Business Subcontracting Plan (Apr 2008)	52.219-9
<input checked="" type="checkbox"/>	Article 42.41	Liquidated Damages – Subcontracting Plan (Jan 1999)	52.219-16
<input type="checkbox"/>	Article 42.42	Rights in Data-Special Works (Dec 2007)	52.227-17
<input type="checkbox"/>	Article 42.43	Security (May 2002)	952.204-2
<input checked="" type="checkbox"/>	Article 42.44	Workplace Substance Abuse Programs at DOE Sites (Dec 2000)	970.5223-4
<input checked="" type="checkbox"/>	Article 42.45	Rights in Data-Facilities (Dec 2000)	970.5227-1

Article 43 Compliance with 10 CFR 851 and Brookhaven Science Associates’ Worker Safety and Health Program by Integration of Environmental, Safety, and Health into Work Planning and Execution

- (a) In performing work under this Contract, the Contractor and all of its lower tier subcontractors at all levels shall comply with all federal, state and local environmental, safety and health laws and regulations applicable to work on this site. The Contractor and all of its lower tier contractors at all levels shall also comply with 10 CFR 851, Worker Safety and Health Program, BSA’s Worker Safety and Health Program, and DEAR 970.5223-1, Integration of Environmental, Safety and Health into Work Planning and Execution (Dec. 2000). Compliance with 10 CFR 851 and DEAR 970.5223-1 is to be guided by following paragraphs (b) through (e) set forth below.

- (b) The Contractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and will be held accountable for the safe performance of work. The Contractor will exercise a degree of care commensurate with the work and the associated hazards. The Contractor will ensure that management of environmental, safety and health (ES&H) functions and activities becomes an integral and visible part of the Contractor's work planning and execution processes. The Contractor will prepare and submit a Construction Environmental, Safety and Health Plan (ES&H) within three (3) weeks of the Contract signing and before the commencement of any work on site in conformance with the NSLS-II Construction Environmental, Safety and Health Plan. The Contractor's ES&H Plan must ensure that during the performance of work:
- (1) Personnel possess the experience, knowledge, skills and abilities that are necessary to discharge their responsibilities, and will retain records respecting such competency and qualifications, making them available upon request.
 - (2) Resources are effectively allocated to address ES&H, programmatic, and operational considerations. Protecting employees, the public, and the environment is a priority whenever activities are planned and performed.
 - (3) Prior to work performance, the associated hazards will be evaluated and a set of ES&H standards and requirements will be established and implemented to provide assurance that employees, the public, and the environment are protected from adverse consequences.
 - (4) Engineering or administrative controls (in that order of precedence) to prevent and mitigate hazards are tailored to the work being performed and associated hazards. Emphasis will be on designing the work and/or controls to reduce or eliminate the hazards and to prevent accidents and unplanned releases and exposures.
 - (5) Line management is responsible for the protection of employees, the public, and the environment. Line management includes those contractor and subcontractor employees managing or supervising employees performing work.
 - (6) Clear and unambiguous lines of authority and responsibility for ensuring ES&H compliance will be established and maintained at all organizational levels.
- (c) The Contractor, relative to the Statement of Work and contract specifications, must perform and manage work in accordance with BSA's DOE-approved Integrated Safety Management Program and demonstrate through documentation and work practices that its performance of work under this contract-
- (1) fulfills the scope of work as outlined in this contract
 - (2) identifies and analyzes specific, task-level hazards associated with the work
 - (3) develops and implements hazard controls related to the hazards
 - (4) allows the performance of work within the controls
 - (5) provides feedback on the adequacy of hazard controls and continues improvement in safety management as detailed in their ES&H Plan.
- (d) In performing work in accordance with BSA's DOE-approved Integrated Safety Management Program, the Contractor will, prior to initiation of work:
- (1) Demonstrate well-established safety protocols applicable to the scope of work and consistent with the requirements of this clause. Prior to commencement of work on any major separately definable activity, the Contractor must:
 - (a) Submit a Phase Hazard Analysis (PHA) of the affected work. The analysis must:
 - (i) identify foreseeable hazards and planned protective measures;
 - (ii) address further hazards revealed by supplemental site information (e.g., site characterization data, as-built drawings).
 - (iii) provide drawings and/or other documentation of protective measures for which applicable Occupational Safety and Health Administration (OSHA) standards require preparation by a Professional Engineer or other qualified professional;
 - (iv) identify competent persons required for workplace inspections of the activity,

- where required by OSHA standards; and
- (v) address hazards identified in the Statement of Work and this Agreement.
 - (b) Ensure workers are aware of foreseeable hazards and the protective measures described within the activity analysis prior to beginning work on the activity.
 - (c) Require that workers acknowledge being informed of the hazards and protective measures associated with the work activity. Those workers failing to utilize appropriate protective measures must be subject to the Contractor's disciplinary process.
 - (d) Provide a "Stop Work" policy similar to that established by BSA.
 - (e) Provide proof that employees were informed of their Worker Rights and Responsibilities set out in 10 CFR 851.20(b).
- (2) During periods of active work, the Contractor must have a designated ES&H representative with no collateral duties on the worksite who is knowledgeable of the project's hazards and has authority to act on behalf of the Contractor. The ES&H representative must have appropriate training and qualification to perform this function. This person must, as a minimum, have completed the 30-hour OSHA Construction safety class and be a Certified Safety Professional, Certified Industrial Hygienist or have equivalent documented education and experience in construction safety. The designated representative must make frequent and regular inspections of the worksite to identify and correct any instances of noncompliance with the project safety and health requirements.

Each subcontractor shall employ a competent person on the project to function as a Safety Coordinator. The Safety Coordinator will manage the interface with the Contractor's ES&H representative to assure compliance with the Contractor's Environment Safety and Health Plan. This person may have collateral duty responsibility unless specified differently in the contract. The person(s) as a minimum must have completed the 30-hour OSHA Construction Safety Class or an equivalent course applicable to the work to be performed and given by qualified instructors. Such training shall be current. The Safety Coordinator, as a minimum shall be on-site when the subcontractor's work is being performed.

- (3) Workers must be instructed to report to the Project Superintendent or the Contractor's Safety Manager, hazards not previously identified or evaluated. If immediate corrective action is not possible or the hazard falls outside the project's scope, the Contractor must immediately notify affected workers, post appropriate warning signs, implement needed interim control measures, and notify NSLS-II ES&H Manager of the action taken. The Contractor or Contractor designated ES&H representative must stop work in the affected area until appropriate protective measures are established. The Contractor's ESH Representative shall document the condition and the corrective action in their inspection report.
- (4) The Contractor will be notified of worker Environmental, Safety and Health plans acceptance by BSA. Acceptance of the Contractor's worker safety and health plans will be at the sole discretion of BSA.
- (e) Exposure Monitoring/Occupational Medicine. The Contractor will perform the following additional hazard identification tasks compliant with the BSA Integrated Safety Management Program and the Standards of the American Industrial Hygiene Association, prior to commencing work: (Details of a compliant exposure monitoring and occupational medicine program are included in the NSLS-II Construction ES&H Plan) Attachment H.
- (1) Contractor is responsible for identifying all potential exposures (chemical, biological, radiological, physical) to which its employees or the employees of its lower-tier subcontractors will be exposed while performing work under this contract. Contractor is responsible to provide qualified monitoring and assessment personnel and is responsible for providing the required exposure monitoring and providing employees with appropriate personal protective equipment to minimize exposures.

- (2) Contractor shall have an occupational medicine program that is compliant with the applicable requirements of 10 CFR 851, Appendix A. Contractor shall ensure that its employees and the employees of any lower tier subcontractor employees are medically qualified to perform work associated with any potential exposures and hazards that have been identified. Medical qualification and medical surveillance programs are the sole responsibility of the Contractor. In addition, the Contractor is responsible for maintaining any records associated with the administration of these programs. In the event that the Contractor or lower tier subcontractor employee requires a medical qualification examination or medical surveillance program, it is the Contractor's sole responsibility to obtain these services. Contractor must provide documented evidence that they have an occupational medical provider with a licensed medical physician.
- (f) The Contractor shall notify the BSA's Contractual Representative immediately of any OSHA-recordable injuries/illnesses, any "off-normal occurrences," or Government property damaged, that the Contractor determines to have occurred in the course of operations on-site and shall furnish such further information as the BSA Contractual Representative may require. An "off-normal occurrence" is any unplanned or unexpected event, including near misses, or the discovery of a deficiency in a procedure, plan, or system that has real or potentially undesirable consequences to personnel, equipment, facilities, the environment, and/or programs. In addition, the Contractor is responsible for ensuring compliance with 10 CFR 851.26, Recordkeeping and Reporting.
- (g) The Contractor's on-site ES&H activities will be subject to review by the NSLS-II ES&H Manager. Other representatives of BSA may conduct periodic inspections of the Contractor's on-site offices, equipment, work and storage areas for compliance with the applicable ES&H requirements. The BSA Contractual Representative will notify the Contractor by a written Notice of Non-compliance of any observed non-compliance with applicable ES&H requirements. The Contractor shall immediately take appropriate corrective action. The Contractor shall advise the BSA Contractual Representative, in writing, within five (5) working days of the corrective action taken on any safety non-compliance noted on the written Notice of Non-compliance. If the Contractor fails or refuses to correct the safety non-compliance, BSA may perform, or cause to be performed, the necessary corrective work and unilaterally charge the Contractor for the cost thereof. Such charges will be deducted from payments otherwise due the Contractor under this contract. Repeated or willful non-compliances with applicable ES&H requirements by the Contractor shall constitute a default under other provisions of this contract and BSA may terminate the contract in accordance with those provisions.
- (h) The Contractor shall promptly evaluate and resolve any non-compliance with applicable ES&H requirements. If the Contractor fails to provide resolution or if, at any time, the Contractor's acts or failure to act causes substantial harm or an imminent danger to the environment, or health and safety of employees or the public, the BSA Contractual Representative may issue an order stopping work in whole or in part and the Contractor shall be liable for the delay and any costs thereby incurred. Any stop-work order issued by BSA under this clause (or issued by the Contractor to a subcontractor in accordance with this clause) shall be without prejudice to any other legal or contractual rights of BSA. In the event that the BSA Contractual Representative issues a stop-work order, an order authorizing the resumption of the work may be issued at the discretion of the BSA Contractual Representative. The Contractor shall not be entitled to an extension of time, or additional cost or fee, or damages by reason of, or in connection with, any work stoppage ordered in accordance with this clause.
- (i) Employee Concerns Program
- (1) The employees of the Contractor, its agents, or subcontractors, are entitled to use the BSA Employee Concerns Program (631) 344-2888 and/or ES&H Hotline, (631) 344-8800. The ES&H Hotline operates 24 hours per day, 7 days a week. Messages may be left anonymously, and all concerns are handled with confidentiality to the maximum extent possible. Employee concerns may also be submitted in writing to the BSA Employee

Concerns Program, Building 400, or in person to Susan Foster, Bldg. 400, 344-2888 during normal business hours, Monday through Friday 7:30 a.m. to 4:30 p.m.

- (2) For the purpose of this document, allegations, concerns, and complaints are handled in a like manner and are referred to collectively as “employee concerns.” A concern can consist of a declaration, statement, or assertion of impropriety or inadequacy on the part of one’s employer or others at a DOE Site that has affected (or threatens to affect) aspects of operations, such as the environment, health, safety, quality, or security, and may include fraud, mismanagement, waste, or abuse of authority.
 - (3) No retaliation or retribution shall be taken toward any individual as a result of filing an employee concern compliant with 10 CFR 708.
- (j) Civil Penalties and Indemnification
- (1) The 2002 Bob Stump National Defense Authorization Act amended the Atomic Energy Act by adding section 234C “Worker Health and Safety Rules for Department of Energy Nuclear Facilities.” It required DOE to promulgate a worker safety and health rule. DOE published the Rule in the Federal Register on February 9, 2006. The rule is codified at 10 CFR 851. It establishes worker safety and health requirements that govern the conduct of contractor activities at both nuclear and non-nuclear sites. Contractors that fail to comply with the Rule are subject to civil penalties issued by DOE up to \$70,000.00 per violation, with each day of violation constituting a separate violation, or contractual penalties.
 - (2) The Contractor assumes full responsibility and shall indemnify, hold harmless, and defend BSA, its directors, officers, and employees from any civil liability under §234C of the Atomic Energy Act of 1954, as amended, or DOE’s implementing regulations, arising out of the activities of the Contractor, its subcontractors, suppliers, agents, employees, and their officers, or directors. The Contractor’s obligation to indemnify and hold harmless shall expressly include attorney fees and other reasonable costs of defending any action or proceeding instituted under §234C or DOE’s implementing regulations.
- (k) The Contractor is responsible for its subcontractors’ compliance with the ES&H requirements of this contract. The Contractor shall include a clause substantially the same as this clause in subcontracts involving complex or hazardous work on a DOE site or BSA owned or operated facilities or premises. Such subcontracts shall provide for the right to stop work under the conditions described herein.
- (l) Emergency Occupational Health Personnel and Facilities
When the total number of workers exceeds 50 workers on-site, the Contractor shall provide a competent emergency health professional within the worksite, who is duly complemented by adequate medical supplies, equipment and facilities. The competent person shall be a full time registered nurse, licensed practical nurse or a physician’s assistant with access to a fully functional first aid.

Article 44 Safety Incentive

- (a) BSA believes that a well designed safety incentive will further motivate an already top performing contractor to strive for continuous improvement and perform at a best in class level. This safety incentive must be substantial, achievable and fairly implemented. To this end, BSA has developed the following safety incentive based on three factors; 1) Accident/Injury Rates; 2) Serious violation of OSHA requirements and 3) Responsiveness to less serious OSHA violations. The value of the safety incentive for the term of the contract has been set at Two Million US Dollars (\$2,000,000.00). This earned incentive will be paid by BSA to the Contractor, over and above the contract price, for superior safety performance. The details of this safety incentive are as follows:

The U.S. Department of Energy (USDOE) construction average for Days Away, Restricted, Transferred (DART) Rate and the Lost Work Day (LWD) case rates will be used in determining

the award. The DART rate will be based on the rates for the most recent full year as presented in the USDOE Computerized Accident, Incident Reporting System (CAIRS) database. The LWD rate will be based on the most recent three year rolling average as presented in the USDOE Computerized Accident, Incident Reporting System (CAIRS) database. Note: The USDOE Construction averages are considerably lower than the Bureau of Labor Statistics rates for the construction industry which is consistent with striving for a “Best in Class” performance.

The USDOE CAIRS average rates established for the first award period are:

<u>Category</u>	<u>Rate</u>
2007 DART	0.6 cases/200,000 person hours
2005-2007 LWD (avg)	0.28 cases/200,000 person hours

Additional periods will be based on the latest year published USDOE CAIRS construction average for the DART and the latest three year average for the LWD case rate.

All work related illness and injuries, as defined in 29CFR 1904, Final Rule, the OSHA record keeping guidelines for Occupational Injuries and Illnesses, effective January 1, 2002, that occur during the performance of this contract shall be reported as called for in the BSA specification.

The safety incentive for the term of the contract has been set at a maximum of Two Million US Dollars (\$2,000,000.00) to be awarded as follows: Up to Five Hundred Thousand US Dollars (\$500,000) to be awarded annually 3 times, on the anniversary date of BSA’s Notice to Proceed, over the length of the contract; and a final incentive of up to Five Hundred Thousand US Dollars (\$500,000) when the contract is completed. The basis for the award will be as follows:

(b) Annual Award

The first award will be made on the basis of DART and LWD case rates at the end of the first year following BSA’s Notice to Proceed, An additional award will be made each succeeding year for a maximum of three annual awards. Annual awards are not cumulative.

No award will be made if the DART rate or LWD rate for the combined contractor and sub-contractor (working on site) rate is greater than USDOE construction average (from CAIRS).

50% of the maximum award (\$250,000) will be granted if the DART Rate and LWD rate for the combined contractor and all sub-contractors at the site is less than or equal to the USDOE construction annual average (from CAIRS) for the DART rate and three year rolling average for the LWD rate.

Additional award is earned based on the percentage difference below the USDOE average LWD rate only, reaching 100% at 50% of the USDOE average LWD rate. (See table 1 below based on DOE Construction rates from 2005-2007 average)

Table 1, Award amounts based on a 2005-2007 DOE LWD averaged rate of 0.28
DART rate is below annual DOE CAIRS DART rate

LWD Rate	Award Amount
>0.28	\$0
0.28	\$250,000 (50% of full award)
0.27	\$267,857
0.26	\$285,714
0.25	\$303,571
0.24	\$321,428
0.23	\$339,285
0.22	\$357,142
0.21	\$374,999
0.20	\$392,856
0.19	\$410,713
0.185	\$428,570
0.17.	\$446,427
0.16	\$464,284
0.15	\$482,141
0.14 (50% of DOE rate)	\$500,000 (100% of full award)

(c) Reductions in Award

There will be a \$5,000 reduction of the earned annual award for each significant instance of OSHA violations, including but not limited to:

1. Fall Protection. Any worker not properly using appropriate fall protection systems.
2. Confined Space. Entry into a confined space without a required confined space permit or violation of permit requirements.
3. Lock-out Tag-out (LOTO). Failure to use when required the LOTO procedures as approved in the Prime Contractor's Safety Plan.
4. Electrical. Any work on or near energized parts without a required Energized Electrical Work Permit or violation of permit requirements.
5. Failure to report injuries. Failure to report a recordable work related injury or illness as defined in 29CFR1904.
6. Fire Protection. Any fire caused by insufficient or inadequate fire protection measures. i.e., failure to obtain a Hot Work Permit, required for welding or other hot work, or work performed without a fire watch and appropriate extinguisher.
7. Hidden Hazards. Excavation without a required Dig/Penetration Permit or violation of the requirements of a Dig Penetration Permit.
8. Shoring Hazards. Failure to protect all excavations from cave-ins by adequate protection systems designed in accordance with 29 CFR 1926.652.

In addition there will be a \$5000 reduction of the earned annual award for lack of responsiveness to less significant issue(s) called to the attention of the General Contractor, including but not limited to:

1. Personnel Protective Equipment. Repeated violations of any worker not wearing personal protective equipment as required in the contract documentation or in the Prime Contractors ES&H Plan.
2. Housekeeping. Repeated housekeeping issues at the job site.
3. Tools. Repeated use of defective hand tools, power tools, extension cords etc.
4. Smoking in violation of the no-smoking policy.
5. Repeated traffic violations issued on the BNL site.

Reductions in award will be subtracted from final award amount for each period.

There will be no annual award regardless of rates if there is a fatality, loss of limb or an injury to the head resulting in permanent disability at the work site.

Determination of incentive award reductions will be made by the NSLS-II ES&H Manager.

(d) Final Award

The final award will be made on the basis of cumulative injury rates averaged over the time period of the conventional construction.

There will be no award if the average DART Rate or LWD rate for the Contractor including all sub-contractors working at the site over the duration of the project is greater than USDOE construction average for DART and LWD rate for the same time period

50% of the final award will be granted if the DART Rate and LWD rate for the Contractor and all sub-contractors working at the site over the duration of the project is less than or equal to USDOE construction average for DART and LWD rate for the same time period

Additional award is earned based on the percentage difference below the USDOE average LWD rate for the same time period, reaching 100% at 50% of the USDOE average LWD rate.

The following example is to illustrate the amount of annual and final award based on DOE 2007 DART and LWD rates using fictitious contractor data for hours, DART cases and LWD cases:

EXAMPLE Award Calculation over course of contract (Note this is based on first years DOE rates only these rates can go up or down in subsequent years)

DOE RATES (2007) DART = 0.6, (2005-2007 avg) LWD = 0.28 Rate = # of (DARTs or LWD cases) x 200,000/actual hours worked during the period						
	Hours worked in period includes all contractor and sub-tier contractors	Number of DART Cases in period	Number of Lost Work Day Cases in period	DART RATE	LWD RATE	AWARD
First Period	600,000 (based on 300 workers @ 2000/yr)	1	0	.33	0	Full award (\$500,000) both rates are below the trigger rates of .6 and .28 and LWD is below 50% of the DOE CAIRS rate
Second Period	600,000	1	2	.33	.66	No award.66 exceeded the DOE LWD rate of .28
Third Period	600,000	0	0	0	0	Full award (\$500,000)
Final Award (total for	1,800,000 (3 yrs x 600,000/yr)	2	2	.22	.22	71% of total possible award (\$357,142); both rates less than DOE

all periods)						average of 0.6 and 0.28 earning \$250,000 plus additional award of \$107,142 based on an LWD of .22 (from table 1)
						Total Project Award \$1,357,142

- (e) All actions by the Incentive Determination Official (IDO)/NSLS-II ES&H Manager shall not be subject to interpretation, dispute or legal claim and shall be the sole determination by the NSLS-II IDO.

Article 45. Identification of Employees

- (a) The Contractor agrees, pursuant to Executive Order 12989, to use an electronic employment Eligibility Verification (E-Verify) system designated by the Secretary of Homeland Security to verify the eligibility of:
 - (i) all persons hired during the contract term by the Contractor to perform duties within the United States; and
 - (ii) all persons assigned by the Contractor to perform work within the United States on the Federal contract.

The Contractor agrees to incorporate the substance of this clause in all subcontracts under this contract.

- (b) All contractor and subcontractor employees who will perform work on the Brookhaven National Laboratory (BNL) site are required to attend the Contractor/Vendor Orientation Training Course their first day on site and be approved by Brookhaven Science Associates, LLC (BSA). Contractor and subcontractor employees who have not attended the Safety Orientation will be directed to stop work until they have done so.
- (c) At no cost to the Contractor, BSA will issue contractor employee photo identification badges which will be required to obtain access to the site.
- (d) U.S. citizens must bring proof of citizenship, photo ID and proof of Social Security number. Acceptable citizenship proof is a passport, birth certificate, naturalization papers, voting eligibility, or similar documentation. Drivers' license, military ID cards, union cards, and Social Security cards are insufficient by themselves as proof of citizenship. Proof of Social Security number includes Social Security card, pay stub, W-2 form or medical insurance card. Handwritten documents are not acceptable. Upon arrival at the BNL Main Gate, they will be sent to the Visitors Trailer to receive a temporary pass, which allows them access to the site to attend CVO training.
- (e) All non-U.S. citizen workers, including Legal Permanent Residents, requiring access to BNL shall complete a BNL Form 473 located on the BNL home page, <http://www.bnl.gov>, Guest Registration link. Each worker shall provide the requested personal information and information concerning their company, forwarding the completed form to their designated BNL sponsor. Non-U.S. citizens shall provide documentation showing eligibility to be in the United States. This includes a valid passport and visa. Other documentation, to include but not limited to, a permanent resident card, passport entry "process form 1-551," INS documents 1-94, 1-20, DS-2019, or 1-539 part 3 and proof of Social Security, may be necessary to establish legal status and work on the BNL site. Failure to provide proper documentation will result in access being denied until the required documents are provided. Foreign National Contractor employees must submit all required documents 30 days in advance of the required access date as access approvals may take up to 30 days. All Foreign National Contractor employees are responsible to ensure they remain in legal INS status. BNL ID badges will expire on the expiration date of their current legal

status or one year after issuance, whichever comes first. At that point they must reapply with updated documentation to continue eligibility to work at BNL.

- (f) The Contractor shall ensure that all contractor and subcontractor employees who will perform work on site promptly obtain a current BNL contractor employee photo identification badge. Badges shall be obtained from the Badging Office in the Brookhaven Research Support Building, Bldg. 400, 400 Brookhaven Avenue, and Monday through Thursday from 8:30 a.m. through 4 p.m. and Friday from 8:30 a.m. through 1 p.m. To keep badging time to a minimum, the Contractor should limit sending all employees at the same time.
- (g) All Contractor and subcontractor employees shall wear their ID badges visibly at all times while on site.
- (h) Contractor employee identification badges are valid for one year after issuance and require renewal from the Badging Office in the Brookhaven Research Support Building, Bldg. 400. Immediately on release of employees or project completion, whichever comes sooner, the badge holder or the Contractor's authorized representative shall return badges to the Badging Office in Brookhaven Research Support Building, Bldg. 400.
- (i) All badge holders shall report lost identification badges immediately to the Badging Office, Brookhaven Research Support Building 400.

Attachment B - Davis-Bacon General Decision Number: NY080013 09/19/2008 NY13

Page Intentionally Left Blank

General Decision Number: NY080013 09/19/2008 NY13

Superseded General Decision Number: NY20070013

State: New York

Construction Types: Building, Heavy, Highway and Residential

Counties: Nassau and Suffolk Counties in New York.

BUILDING CONSTRUCTION PROJECTS, RESIDENTIAL CONSTRUCTION PROJECTS (including single family homes and apartments up to and including 4 stories), HEAVY CONSTRUCTION PROJECTS, HIGHWAY CONSTRUCTION PROJECTS

Modification Number Publication Date

0	02/08/2008
1	02/15/2008
2	02/22/2008
3	02/29/2008
4	03/14/2008
5	03/21/2008
6	05/02/2008
7	06/13/2008
8	07/04/2008
9	07/18/2008
10	07/25/2008
11	08/08/2008
12	08/22/2008
13	08/29/2008
14	09/19/2008

ASBE0012-001 12/31/2007

	Rates	Fringes	
Asbestos Workers/Insulator includes application of all insulating materials, protective coverings,coatings and finishing to all types of mechanical systems.....	\$ 46.86	26.97	
HAZARDOUS MATERIAL HANDLER.....	\$ 24.45		8.50

BOIL0005-001 01/01/2007

	Rates	Fringes
BOILERMAKER.....	\$ 44.98	28.95+a

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Thanksgiving Day, Memorial Day, Independence Day, Labor Day and Good Friday, Friday after Thanksgiving, Christmas Eve Day and New Year's Eve

BRNY0001-001 07/01/2008

	Rates	Fringes
BRICKLAYER.....	\$ 46.68	20.21
MASON - STONE.....	\$ 55.34	22.13

CARP0007-016 07/01/2008

	Rates	Fringes
Carpenters:		
Building.....	\$ 36.63	26.93
Heavy & Highway.....	\$ 36.63	26.93
Residential.....	\$ 30.00	11.20

CARP0740-001 07/01/2005

	Rates	Fringes
MILLWRIGHT.....	\$ 38.13	35.40

CARP1456-009 07/01/2008

	Rates	Fringes
Carpenters:		
DIVERS TENDERS.....	\$ 39.18	38.06
DIVERS.....	\$ 54.63	38.06
DOCKBUILDERS.....	\$ 43.61	38.06
PILEDRIVERMAN.....	\$ 43.61	38.06

CARP1536-001 07/01/2003

	Rates	Fringes
Carpenters:		
TIMBERMEN.....	\$ 34.47	26.05

 ELEC0025-001 04/26/2008

	Rates	Fringes
ELECTRICIAN.....	\$ 44.75	28.52

 ELEC0025-002 02/09/2008

	Rates	Fringes
Electricians:		
Maintenance Unit.....	\$ 34.00	35.5%+3.46
Telephone Unit.....	\$ 31.00	47.5%+2.21
Wiring for single or multiple family dwellings and apartments up to and including 2 stories.....	\$ 24.30	13%+8.72

 * ELEC1049-002 04/06/2008

	Rates	Fringes
Line Construction:		
Substation and Switching structures pipe type cable installation and maintenance jobs or projects; Railroad electrical distribution/ transmission systems maintenance (when work is not performed by railroad employees) Overhead and Underground transmission/distribution line work. Fiber optic, telephone cable and equipment;		
Groundman.....	\$ 24.83	17.91
Heavy Equipment Operator...	\$ 33.10	17.91

Lineman & Cable Splicer....	\$ 41.38	17.91
Material Man.....	\$ 36.00	17.91

 ELEV0001-002 03/17/2008

Rates	Fringes
-------	---------

ELEVATOR MECHANIC

Elevator Constructor.....	\$ 48.19	21.085+a+b
Modernization and Repair....	\$ 38.46	20.935+a+b

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Good Friday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

b. PAID VACATION: An employee who has worked less than 5 years shall receive vacation pay credit on the basis of 4% of his hourly rate for all hours worked; an employee who has worked 5 to 15 years shall receive vacation pay credit on the basis of 6% of his hourly rate for all hours worked; an employee who has worked 15 or more years shall receive vacation pay credit on the basis of 8% of his hourly rate for all hours worked.

 ENGI0138-001 06/01/2008

BUILDING CONSTRUCTION

Rates	Fringes
-------	---------

Power equipment operators:

GROUP 1.....	\$ 46.04	27.94+a
GROUP 2.....	\$ 43.65	27.94+a
GROUP 3.....	\$ 42.06	27.94+a
GROUP 4.....	\$ 38.85	27.94+a
GROUP 5.....	\$ 37.24	27.94+a

NOTES:

Hazmat premiums:

Level A	3.50
Level B	2.50
Level C	1.50

Level D 1.00

Oiler on truck cranes with boom length of 100 ft. or more
.25

FOOTNOTE:

a. Paid Holidays: New Year's Day, Lincoln's Birthday, Washington's Birthday or President's Day (in lieu of Lincoln's or Washington's Birthday), Good Friday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, Christmas Day or days celebrated as such. Any holiday that falls on a Saturday will be celebrated on Friday.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt spreader, backhoe crawler capacity over caterpillar 225 and Komatsu 300, Boiler (thermoplastic), Cherry picker, over 50 tons, CMI or Maxim spreader, concrete pump (with oiler), crane (crawler truck), crane (on barge), crane (stone setting), crane (structural steel), crane (with clam shell), derrick, dragline, dredge, gradall, grader, hoist (3 drum), loading machine (bucket) cap of 10 yds or over micro-trap, with compressor (negative air machine), milling machine, large pile driver, power winch, Stone setting/structural steel, power winch (truck mounted/stone steel) powerhouse, road paver scoop, carry-all, scraper in tandem shovel, sideboom tractor, sideboom tractor (used in tank work), stone spreader (self propelled tank work), zamboni (ice machine)

GROUP 2: Backhoe, boom truck, bulldozer, cherry picker, conveyor (multi), dinky locomotive, forklift, hoist, 2 drum, loading machine, loading machine (front end) mechanical compactors, (machine drawn), mulch machine (machine-fed), power winch, other than stone/structural steel, power winch (truck mounted other than stone steel) pump (hydraulic, with boring machine), roller, (asphalt), scoop (carry-all scraper), tower crane (maintenance man), trenching machine

GROUP 3: Compressor (structural steel), Compressor (2 or more in battery), concrete finishing machine, concrete spreader, conveyor, curb machine (asphalt or concrete), curing machine, fireman, hoist (1 drum), micro-trap, (self

contained, negative air machine), pump (4 inches or over), pump (hydraulic), pump (jet), pump (sumbersible), pump (well point), pulvi-mixer, ridge cutter, roller (dirt), striping machine, vac-all, welding and burning, welding machine (pile work), welding machine (structural steel)

GROUP 4: Compressor, compressor (on crane), compressor (pile work), compressor (stone setting), concrete breaker, concrete saw or cutter, forklift (walk behind, power operated), generator-pile work, generator, hydra hammer, mechanical compactors (hand operated), oiler (truck crane), pin puller, portable heaters, powerbroom, power buggies, pump (double action diaphgrgm), pump (gypsum), trench machine (hand), welding machine

GROUP 5: Batching plant (on site of job), generator (small), mixer (with skip), mixer (2 small with or without skip), mixer (2 bag or over, with or without skip), mulch machine, oiler, pump (centrifugal, up to 3 inches), root cutter, stump chipper, tower crane (oiler), tractor (caterpillar or wheel vibrator)

 ENGI0138-002 08/01/2008

HEAVY & HIGHWAY

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 47.31	27.94+a
GROUP 2.....	\$ 44.14	27.94+a
GROUP 3.....	\$ 42.54	27.94+a
GROUP 4.....	\$ 39.33	27.94+a
GROUP 5.....	\$ 37.74	27.94+a
GROUP 6.....	\$ 29.91	9.05+10%

NOTES:

Hazmat premiums:

Level A	3.50
Level B	2.50
Level C	1.50

Truck and Crawler Cranes long boom premiums:

boom lengths (including jib) 100-149 ft	.50
boom lengths (including jib) 150-249 ft	.75
boom lengths (including jib) 250-349 ft	1.00

boom lengths (including jib) 350 ft	1.50
Cranes using clamshell buckets	.25
Front end loader 10 yds and above	.25
Oiler on truck cranes with boom length of 100 ft. or more	.25

FOOTNOTE:

a. Paid Holidays: New Years Day, Lincoln's Birthday, Washington's Birthday or Presidents Day (in lieu of Lincoln's or Washington's Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day or days celebrated as such. Any holiday that falls on Saturday will be celebrated on Friday.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt spreader, backhoe crawler (capacity over caterpillar 225 and komatsu 300), boiler (thermoplastic), boring machine (post hole), cgherry picker (over 50 ton), CMI or maxim spreader, concrete pump, with oiler, crane (crawler truck), crane (on barge), crane (stone setting) crane (structural steel), crane (with clam shell), derrick, dragline, dredge, gradall, grader, hoist (3 drums), loading machine (bucket) capacity of 10 yards or over, micro-trap (with compressor-negative air machine), milling machine (large), piledriver, power winch (stone setting structural steel), power winch (truck mounted/stone steel), power-house, road paver, scoop, carry all (scraper in tandem), shovel, sideboom tractor, sideboom tractor (used in tank work), stone spreader (self-propelled), tank work, tower crane

GROUP 2: Bulldozer, Backhoe, Boom Truck, Boring machine/auger, Cherrypicker, Conveyor (multi), Dinky Locomotive, Forklift, Hoist (2 drum), Loading Machine, Loading Machine (front end), Mechanical Compactor (machine drawn), Mulch Machine (machine- fed), Power Winch (other than stone/structural steel), Power Winch (truck mounted/other than stone steel), Pump Hydraulic (with boring machine), Roller (asphalt), Scoop (carry-all, scraper), Tower Crane (maintenance man), Trenching Machine, Vermeer Cutter, Work Boat

GROUP 3: Curb Machine (asphalt or concrete), Maintenance Engineer (small equipment), Maintenance engineer (well-point) Mechanic (fieldman), Micro-Trap (self contained, negative air machine), Milling Machine (small), Pulvi-mixer, Pump (4 inches or over), Pump Hydraulic, Pump Jet, Pump Submersible, Pump (well point), Roller Dirt, Vac-All, Welding and burning, Compressor (structural steel), Compressor (2 or more battery), Concrete Finishing Machine, Concrete Spreader, Conveyor, Curing Machine, Fireman, Hoist (one drum), Ridge Cutter, Striping Machine, Welding Machine (pile work), Welding Machine (structural Steel).

GROUP 4: Compressor, Compressor on crane, Compressor (pile work), Compressor (stone setting), Concrete Breaker, Concrete Saw or Cutter, Fork Lift (walk behind, power operated), Generator- Pile Work, Generator, Hydra Hammer, Mechanical Compoactors (hand operated), Oiler (truck crane), Pin Puller, Portable Heaters, Powerbroom, Power buggies, Power Grinders, Pump (double action diaphragm), Pump gypsum, Pump (single action 1 to 3 inches), Trench Machine hand, Welding Machine

GROUP 5: Batching Plant (on site of job), Generator (small), Grinder, Mixer (with skip), Mixer (2 small with or without skip), Mixer (2 bag or over, with or without skip), Mulch Machine, Oiler, Pump (centrifugal, up to 3 inches), Root Cutter, Stump Chipper, Tower Crane (oiler), Track Tamper (2 engineers, each), Tractor (caterpillar or wheel), Vibrator, Work boat (deckhand),

GROUP 6: Well drillers

 IRON0046-003 07/01/2007

	Rates	Fringes
IRONWORKER		
METALLIC LATHERS.....	\$ 43.80	30.37

 IRON0197-001 07/01/2008

	Rates	Fringes
IRONWORKER		
STONE DERRICKMAN.....	\$ 40.50	36.07

IRON0361-001 07/01/2008

	Rates	Fringes
IRONWORKER (STRUCTURAL).....	\$ 39.65	49.81

IRON0580-001 07/01/2008

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 39.55	38.70

LABO0066-001 07/01/2008

BUILDING

	Rates	Fringes
Laborers:		
Laborers.....	\$ 28.75	23.15
Plasterers Tenders.....	\$ 28.75	23.15

LABO0078-001 12/01/2006

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR BUILDING CONSTRUCTION ASBESTOS (Removal, Abatement, Encapsulation or Decontamination of asbestos); LEAD; & HAZARDOUS WASTE LABORERS (Hazardous Waste, Hazardous Materials, Biochemical and Mold Remediation, HVAC, Duct Cleaning, Re-spray Fireproofing, etc).....	\$ 27.00	9.81

LABO1298-001 06/01/2007

HEAVY & HIGHWAY

Rates Fringes

Laborers:

Asphalt Rakers; Formsetters.	\$ 31.53	20.09+A
Asphalt Shovelers, Roller		
Boys & Tamperers.....	\$ 30.66	20.09+A
Regular Laborers.....	\$ 28.05	20.09+A

FOOTNOTES:

Laborers working in a hazardous material hot zone shall receive an additional 20% premium.

Where the contract provides for night work outside the regular hours of work, the employees shall be paid at straight time plus a 25% night work premium for the 8 hours worked during the night.

Firewatch work performed after regular hours shall be paid an additional 10% premium. Second and Third Shift work will be paid at a 10% premium.

Contractor requesting laborers certified for hazardous material work and/or employed on hazardous material shall be required to pay an additional 10% premium.

PAIN0009-002 05/01/2008

Rates Fringes

Painters:

GLAZIERS.....	\$ 38.00	29.59
Painters, Drywall Finishers.	\$ 34.50	19.84
Spray, Scaffold, Sandblasting.....	\$ 37.50	19.84

PAIN0806-010 10/01/2007

Rates Fringes

Painters:

Stuctural Steel and Bridge..	\$ 44.00	26.96
------------------------------	----------	-------

PAIN1974-002 07/04/2007

Rates Fringes

Painters:

DRYWALL TAPERS/POINTERS.....\$ 38.32 19.39

PLAS0260-003 07/01/1999

Rates Fringes

PLASTERER.....\$ 27.91 15.16

PLAS0780-001 07/01/2007

Rates Fringes

CEMENT MASON/CONCRETE FINISHER...\$ 44.40 26.10

PLUM0200-001 05/01/2008

Rates Fringes

PLUMBER

BUILDING CONSTRUCTION:.....\$ 48.98 21.55

RESIDENTIAL CONSTRUCTION:...\$ 26.73 8.15

PLUM0638-001 07/05/2006

Rates Fringes

PLUMBER

SERVICE FITTERS.....\$ 26.30 2.55

SPRINKLER FITTERS,
STEAMFITTERS.....\$ 43.82 32.72

Service Fitter work shall consist of all repair, service and maintenance work on domestic, commercial and industrial refrigeration, air conditioning and air cooling, stoker and oil burner apparatus and heating apparatus etc., including but not exclusively the charging, evacuation, leak testing and assembling for all machines for domestic, commercial and industrial refrigeration, air conditioning and heating apparatus. Also, work shall include adjusting, including capacity adjustments, checking and repairing or replacement of all controls and start up of all machines and repairing all defects that may develop on any system for domestic, commercial and industrial refrigeration and all air conditioning, air cooling, stoker and oil burner apparatus

and heating apparatus regardless of size or type.

ROOF0154-001 10/01/2007

	Rates	Fringes
ROOFER, Including Built Up, Composition and Single Ply Roofs.....	\$ 36.50	23.78

SHEE0028-002 01/31/2008

	Rates	Fringes
Sheet metal worker.....	\$ 43.69	34.69

* TEAM0282-002 07/01/2008

	Rates	Fringes
Truck drivers:		
Asphalt.....	\$ 35.40	29.2025+a+b
Euclids & turnapulls.....	\$ 35.50	29.2025+a+b
High Rise.....	\$ 41.81	27.1025+a+b

FOOTNOTES:

a. PAID HOLIDAYS: New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Election Day, Veterans' Day (Armistice Day), Thanksgiving Day and Christmas Day. Employees working two (2) days in the calendar week in which a holiday falls are to be paid for such holiday, provided that they shape each remaining workday during such calendar week.

b.VACATION: For each 15 days worked with the contract year an employee will receive one day vacation with pay, maximum vacation of 3 weeks per year. In addition, an employee who qualifies for two weeks (10 days) vacation or more with pay and who has been continuously employed by his employer for six years before the close of any contract year, shall be entitled to one extra day vacation; seven years before the close of any contract year, shall be entitled to two extra days vacation; eight years before the close of any contract year, shall be entitled to three extra day vacation; nine years before the close of any contract year, shall be

entitled to four extra day vacation; ten years before the close of any contract year or over shall be entitled to three weeks paid vacation with pay, but in no event shall any employee be entitled to more than three weeks vacation pay per year.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal

process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

Attachment C - Specifications for NSLS-II Vols. 1-2 dated XXX XX, 2008

Page Intentionally Left Blank

Specifications and Drawings are an integral part of the contract award.

Instructions for obtaining NSLS-II Specifications and Drawings for submitting a proposal under this RFP are contained in Enclosure 5.

Page Intentionally Left Blank

Attachment D – Drawings Vols. 1-X dated XXX XX, 2008

Page Intentionally Left Blank

Specifications and Drawings are an integral part of the contract award.

Instructions for obtaining NSLS-II Specifications and Drawings for submitting a proposal under this RFP are contained in Enclosure 5.

Page Intentionally Left Blank

Attachment E - Small and Small Disadvantaged Business Subcontracting Plan

Page Intentionally Left Blank

The following is an example/guide to use when preparing a Contract Specific Subcontracting Plan for Brookhaven National Laboratory.

Fill in all blank lines and delete or add any subparagraph number/letters as applicable.

Table of Contents

Small Business Subcontracting Plan	2 to 6
Examples of the types of small businesses that can be counted in subcontracting plans	7
Definitions of Small Business Categories	8 & 9

SMALL BUSINESS SUBCONTRACTING PLAN

DATE:

CONTRACTOR:

SOLICITATION OR CONTRACT NUMBER:

PROPOSAL NO.;

ITEM/SERVICE:

The following, together with any attachments, is hereby submitted as a Subcontracting Plan to satisfy the applicable requirements of Public Laws 95-507 and 99.66.

1. The following percentage goals (expressed in terms of a percentage of total planned subcontracting dollars) are applicable to the contract cited above or to the contract awarded under the solicitation cited.
 - a. SMALL BUSINESS CONCERNS: (SB) 46.40% of total planned subcontracting dollars under this contract will go to the subcontractors who are small business concerns.
 - b. SMALL DISADVANTAGED BUSINESS CONCERNS: (SDB) 6.30% of the total planned subcontracting dollars under this contract will go to subcontractors who are small disadvantaged business concerns. This percentage is included in the percentage shown under 1(a).
 - c. WOMEN-OWNED SMALL BUSINESS CONCERNS: (WOB) 5.80% of the total planned subcontracting dollars under this contract will go to the subcontractors who are women-owned small business concerns. This percentage is included in the percentage shown under 1(a).
 - d. HUBZONE SMALL BUSINESS CONCERNS (HUB-ZONE): 3.0% of total planned subcontracting dollars under this contract will go to subcontractors who are HUBZone small business concerns. This percentage is included in the percentage shown under 1(a).
 - e. VETERAN-OWNED SMALL BUSINESS CONCERNS: (VOB) 3.0% of total planned subcontracting dollars under this contract will go to subcontractors who are veteran-owned small business concerns. This percentage is included in the percentage shown under 1(a).
 - f. SERVICE-DISABLED OWNED BUSINESS: (SDVOB) 3.0% of total planned subcontracting dollars under this contract will go to subcontractors who are service-disabled veteran-owned business concerns. This percentage is included in 1(a).

2. The following dollar values correspond to the percentage goals shown in (1) above.
 - a. The total estimated dollar value of all planned subcontracting (to all types of business concerns) under this contract is: \$_____.
 - b. Total dollars planned to be subcontracted to SB: \$_____.
 - c. Total dollars planned to be subcontracted to SDB: \$_____.
This amount is included in the amount shown under (2b) above.
 - d. Total dollars planned to be subcontracted to WOB: \$_____.
This amount is included in the amount shown under (2b) above.
 - e. Total dollars planned to be subcontracted to HUB-ZONE: \$_____.
This amount is included in the amount shown under (2b) above.
 - f. Total dollars planned to be subcontracted to VOB: \$_____.
This amount is included in the amount shown under (2b) above.
 - g. Total dollars planned to be subcontracted to SDVOB: \$_____.
This amount is included in the amount shown under (2b) above.

3. The following products and/or services will be subcontracted under this proposal to SB, SDB, WOB, HUB-Zone, HBCU, VOB, and SDVOB:

	<u>SB</u>	<u>SDB</u>	<u>WOB</u>	<u>HUB-ZONE</u>	<u>VOB</u>	<u>SDVOB</u>
OVERHEAD	\$	\$	\$	\$	\$	\$
MATERIAL & SUPPLIES	\$	\$	\$	\$	\$	\$
SUBCONTRACTING	\$	\$	\$	\$	\$	\$
TOTALS	\$	\$	\$	\$	\$	\$

4. The following method was used in developing subcontracting goals in (1) above.
[Describe the method used to develop the goals]

5. The following are potential sources used by [Insert Company Name] for solicitation purposes:
 - a. Central Contractor Registration (CCR)
 - b. [List additional sources]
 - c.
 - d.
 - e.

- 6. Indirect and overhead costs have been included in the goals specified in (1) above and (2) above. They are determined as follows: [Note, if indirect costs are not included state so]
 - a.
 - b.
 - c.

7. The following individual or Liaison Officer (LO) will administer the subcontracting program:

NAME: _____

ADDRESS: _____

EMAIL: _____

TELEPHONE: _____

TITLE: _____

This individual's specific duties, as they relate to the firm's subcontracting program, are as follow:

- a.
- b.
- c.

8. The following efforts will be taken to assure that SB, SDB, WOB, HUB-Zones VOB, and SDVOBs will have maximum opportunity to compete for subcontracts:

- a. Outreach efforts will be as follows:
 - i.
 - ii.
 - iii.

b. The following internal efforts will be made to guide and encourage buyers:

- i.
- ii.
- iii.

9. _____ assures that the clause entitled “Utilization of Small Business Concerns” will be included in all subcontracts, which offer further subcontracting; and all subcontractors (except small business concerns) who receive subcontracts in excess of \$550,000 will be required to adopt and comply with a subcontracting plan similar to this one.

Each plan will be reviewed by comparing it with provisions of Public Law 95.507, and assuring that all minimum requirements of an acceptable subcontracting plan have been satisfied. This acceptability of percentage goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of potential small, small disadvantaged and women-owned small business subcontractors, and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports, and/or as time and availability of funds permits, periodic visits to subcontractors’ facilities to review applicable records and subcontracting program progress.

10. Pursuant to the mechanics of form submission, _____ agrees to:

- a. Send such periodic reports and cooperate in any studies or surveys as may be required by the contracting agency or the Small Business Administration in order to determine the extent of compliance by _____ with the subcontracting plan and with the clause entitled “Utilization of Small Business Concerns”, contained in the contract.
- b. Submit periodic reports in order to allow the Government to determine the extent of compliance with the subcontracting plan.
- c. Utilize the eSRS system Individual Subcontracting (ISR) and/or Summary Subcontracting Report (SSR) in accordance with the instructions provided at <https://esrs.symplicity.com/index?cck=1>.
- d. Ensure that its subcontractors agree to submit ISR and SSR reports when applicable.

11. _____ agrees to maintain at least the following types of records to document compliance with subcontracting plan:

- a. Small, small disadvantaged and women-owned small business concern source lists, guides and other data identifying SDB, WOB, HUB-Zones, VOB, and SDVOBs.
- b. Organizations contacted in an attempt to locate sources that are SB, SDB, WOB, HUB-Zone, VOB, & SDVOB small business concerns.

- c. On a contract-by-contract basis, records on all submitted solicitations over \$100,000, indicating on each solicitation (1) whether small business concerns were solicited, and if not, why not; (2) whether SDB, WOB, HUB-Zones, VOB, and SDVOBs were solicited, and if not, why not; and (3) reasons solicited SDB, WOB, HUB-Zones, VOB, and SDVOBs small business concerns failed to receive the subcontract awards.
 - d. Records to support other outreach efforts: Contacts with Minority and Small Business Trade Associations, etc. Attendance at small and minority business procurement conferences and trade fairs.
 - e. Records to support internal activities to guide and encourage buyers: Workshops, seminars, training programs, etc. Monitoring activities to evaluate compliance.
 - f. On a contract-by-contract basis, records to support subcontract award data to include name and address of subcontractor.
12. In order to effectively implement this plan to the extend consistent with efficient contract performance, _____ shall perform the following functions:
- a. Assist SB, SDB including WOB, HUB-Zones VOB, and SDVOBs by arranging solicitations, time for the preparation of bids, quantities, specifications and delivery schedules so as to facilitate participation by such concerns. Where _____ lists of potential SB, SDB including WOB, HUB-Zones VOB, and SDVOBs subcontractors are excessively long, reasonable effort shall be made to give all such small business concerns an opportunity to compete over a period of time.
 - b. Provide adequate consideration to SB, SDB, WOB, HUB-Zones VOB, and SDVOBs in all “make-or-buy” decisions.
 - c. Counsel and discuss subcontracting opportunities with representatives of SB, including SDB, WOB, HUB-Zones, VOB, and SDVOBs.
 - d. Provide notice of subcontractors concerning penalties for misrepresentation of the above business status.

SIGNED:

TYPED NAME: _____

TITLE: _____

DATE: _____

Plan Accepted by: _____

**EXAMPLES OF THE TYPES OF SMALL BUSINESSES
THAT CAN BE COUNTED IN SUBCONTRACTING PLANS:**

These are just a few types of products that, if bought from Small Business Firms, can be counted in your subcontracting plan:

Audio/Video firms (services and/or products)
Chemicals firms
Computer firms (services and/or products)
Electronic components firms
Freight and material handling firms (services and/or products)
Hardware firms
Janitorial/Building equipment firms (services and/or products)
Laboratory supplies firms
Landscaping firms (services and/or products)
Lighting firms (bulbs, lamps, etc.)
Machine shops
Magnet coils
Office furniture firms
Office supply firms
Optics
Pharmaceuticals/Biological
Photocopying
Photographic (services and/or products)
Plumbing (services and/or products)
Power supplies
Printing firms
Pumps
Radiation equipment
Raw materials
Repairs
Safety (services and/or products)
Testing services
Training services

Definitions of Small Business Categories

Small Business (SB)

A small business, including its affiliates, is one that is independently owned and operated, not dominant in the field of operation in which it is bidding on government contracts, and qualified as a small business under the criteria in 13 CFR part 121, and NAICS size standards. The North American Industrial Classification System or NAICS codes determine whether a business is considered small by their industry code. These codes pertain to the size of the firm and not the value of the procurement. The standards are set by either the number of employees or by the average annual sales over a three-year period. The NAICS are on the web at www.sba.gov/size.

Small Disadvantaged Business (SDB)

A small business that is: at least 51% owned by one or more socially and economically disadvantaged people or in the case of any publicly owned business, at least 51% of the stock of which is owned by one or more disadvantaged people; is a U.S. citizen; owns, operates and manages the business on a daily basis; and is in business at least one year. **To do business with BNL a SDB company must be certified with the SBA.** For more information go to: <http://www.sba.gov/sdb/indexaboutsdb.html>

These people are automatically considered to be socially and economically disadvantaged:

- Black Americans
- Hispanic Americans
- Indian Tribes – are those individuals who have at least 51% of their origins in any Indian tribe, band, nation or other organized group or community of Indians, including any Alaska Native Corporation person.
- Native Americans – are considered American Indians, Eskimos, Aleuts, and native Hawaiians.
- Asian-Pacific Americans – are those individuals who have at least 51% of their origins in: Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands, Republic of Palau (, the Northern Marina Islands, Laos, Kampuchea (Cambodia), Taiwan, Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Republic of the Marshall Islands, or the Federated States of Micronesia.
- Subcontinent Asian Americans - are those individuals who have at least 51% of their origins in: India, Pakistan, Bangladesh, Sri Lanka, Bhutan, or Nepal.

There is a special Small Business Administration (SBA) program for small disadvantaged businesses called the 8(a) program. For more information go to: <http://www.sba.gov/8abd/>

Woman-Owned Small Business (WOB)

A small business that is: at least 51% owned by one or more women or in the case of any publicly owned business, at least 51% of the stock of which is owned by one or more women; is a U.S. citizen; owns, operates and manages the business on a daily basis; and is in business at least one year. For more information go to: http://www.sba.gov/mostrequesteditems/CON_FAQ9.html

Veteran-Owned Small Business (VOB)

A small business that is at least 51% owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or in the case of any publicly owned business, at least 51% of the stock of which is owned by one or more veterans. For more info go to:

<http://www.sba.gov/aboutsba/sbaprograms/ovbd/index.html>

Service-Disabled Veteran-Owned Small Business (SDVOB)

Means a small business that is not less than 51% owned, operated and managed by one or more service-disabled veterans. In the case of any publicly owned business, at least 51% of the stock must be owned by one or more service-disabled veterans and whose management and daily business operations are controlled by one or more service-disabled veterans or in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran. A Service-disabled veteran is defined in 38 U.S.C. 101(2) with a disability that is service-connected.

For more info go to: <http://www.sba.gov/aboutsba/sbaprograms/ovbd/index.html>

HUB-Zone Small Business (HUB)

For a small business to participate in the HUB-Zone program, a concern must meet the following requirements: It must be small; located in an Historically Underutilized Business Zone (HUB-Zone); owned/controlled by one or more U.S. citizens; and at least 35% of its employees must reside in a HUB-Zone. To do business with BNL a HUB-Zone company must be certified with the SBA. To find out where HUB-Zones are go to:

<https://eweb1.sba.gov/hubzone/internet/general/findout.cfm>

Page Intentionally Left Blank

Attachment F - BSA Model Environmental Safety and Health Plan

Page Intentionally Left Blank

National Synchrotron Light Source II
Construction Environment, Safety and Health Plan
for
Conventional Construction
of the Ring Building

July 2008



BROOKHAVEN
NATIONAL LABORATORY

Operated by
Brookhaven Science Associates
under contract with the
U.S. Department of Energy

This page intentionally blank.

**National Synchrotron Light Source II
Construction Environment, Safety and Health Plan for the
Conventional Construction of the Ring Building**

APPROVALS

Submitted:

Ken Krasner

Ken Krasner
Safety and Health Services Division Construction Safety Engineer
Brookhaven National Laboratory

7/31/08
Date

Concurrence:

Steven Hoey

Steven Hoey
NSLS-II ESH Manager
Brookhaven National Laboratory

7/31/08
Date

Concurrence:

Michael Dyer for MF

Marty Fallier
NSLS-II Conventional Facilities Division Manager
Brookhaven National Laboratory

7/31/08
Date

Approval:

Steve Dierker

Steve Dierker
NSLS-II Project Director
Associate laboratory Director for Light Sources
Brookhaven National Laboratory

7/31/08
Date

This page intentionally blank.

ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
ANSI	American National Standards Institute
BNL	Brookhaven National Laboratory
BSA	Brookhaven Science Associates
CVO	Contractor Vendor Orientation
DART	Days Away Restricted or Transferred
DOE	U.S. Department of Energy
DOL	Department of Labor
EAP	Employee Assistance Program
ES&H	Environment, Safety and Health
EPA	U.S. Environmental Protection Agency
ISMS	Integrated Safety Management System
JHA	Job Hazard Analysis
LOTO	Lock-Out/Tag-Out
TLVs	Threshold Limit Values
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
NIDA	National Institute of Drug Abuse
NSLS-II	National Synchrotron Light Source II
NYS	New York State
OMP	Occupational Medicine Provider
PFAS	Personal fall arrest system
PHA	Phase Hazard Analysis
PPE	Personal Protective Equipment
SBMS	Standards-Based Management System

TABLE OF CONTENTS

1.0	Certification Letter	9
2.0	BSA Safety Policy Statement	9
3.0	Purpose/Introduction	10
3.1	Definitions.....	10
3.2	General Information.....	10
3.3	Contractor and All Tier Subcontractor Safety Programs	11
4.0	Integrated Safety Management System.....	12
4.1	Principles of Integrated Safety Management System	12
4.2	Core Functions of Integrated Safety Management System.....	13
4.3	Roles and Responsibilities for Integrated Safety Management System.....	14
5.0	DOE Rule for Worker Safety and Health (10 CFR 851).....	15
5.1	Safety and Health Standards	15
5.2	Occupational Medicine Program	15
6.0	Contractor Responsibilities	16
6.1	Emergency Services and Equipment	16
6.2	Job-Site Orientation.....	16
6.3	Security and BNL Site Access.....	16
6.4	Disciplinary Policy	16
6.5	Operation of Equipment and Machinery.....	17
6.6	Evacuation of the Work Area.....	18
6.7	Accident Investigation and Reporting.....	18
6.8	Personnel Protective Equipment	19
6.9	On-Site Safety Inspections.....	20
6.10	Weekly Tool-Box Meetings.....	20
6.11	Protection of the Work Area	20
6.12	Working and Storage Areas	20
6.13	Hazardous Material and Hazardous Waste.....	21
6.14	BSA Stop Work Policy	21
6.15	Occupational Medicine Program	22
6.16	On-Site Medical Services	24
6.17	Sanitation	25
6.18	Drug-Free Workplace	25
6.19	Substance Abuse Program	26
7.0	Job-Specific Work Requirements.....	29
7.1	Phase Hazard Analysis	29
7.2	Compressed Gas	29
7.3	Confined Spaces.....	30
7.4	Electrical Safety.....	31
7.5	Working from Heights, Fall Protection.....	32
7.6	Scaffolds.....	33
7.7	Excavations and Trenches	34
7.8	Fire Protection	36
7.9	Hand and Power Tools.....	37
7.10	Hazard Communication.....	37
7.11	Heat and Cold Stress	38

7.12	Hoisting and Rigging	39
7.13	Lock-Out/Tag-Out (LOTO)	43
7.14	Respiratory Protection	47
7.15	Sources of Radiation	47
7.16	Industrial Hygiene Monitoring	48
7.17	Penetrations	49
7.18	Steel Erection	50
7.19	Concrete and Masonry Operations	51
8.0	Environmental Protection and Waste Management	52
8.1	Stormwater Pollution Prevention and Control	52
8.2	Erosion Prevention and Sediment Control	52
8.3	Spill Prevention and Control	53
8.4	Waste Management	53

Appendices

A	Offenses Requiring Disciplinary Action	55
B.	Contractor Equipment Inspection Form	59
C	Incident Investigation Report	63
D	Construction Safety Inspection Checklist	76
E	PHA Worksheet Guidelines	81
F	Confined Space Permit	88
G	Digging Permit	92
H	Competent Person Certification Letter	98
I	Hot Work Permit	101
J	Sample Lockout/Tagout Program	105
K	Energized Electrical Work Permit	121
L	Example of HAZCOM Training Program	114
M	Critical Lift Evaluation Form	121
O	Contractor Certification Letter	128

1.0 CERTIFICATION LETTER

Brookhaven Science Associates (BSA), the operator of Brookhaven National Laboratory (BNL), maintains certain safety, environmental, and health standards which are flowed down to all contractors and all levels of subcontractors.

BSA requires that each contractor working at BNL agree to these standards and certifies their intent. Appendix O is an example of such a certification letter. This letter must be signed by an officer of the General Contractor, and must be made part of the Environment, Safety and Health Plan submitted for this project. This requirement must also be made part of any contracts to each of the subcontractors performing work on this project.

2.0 BSA SAFETY POLICY STATEMENT

The safety of all personnel is recognized as a primary concern to all participants at BNL's National Synchrotron Light Source II (NSLS-II). Unsafe conditions and unsafe behavior can result in injuries and deaths as well as impact schedules, cause financial losses, and damage professional reputations. As such, it is our goal that all project participants plan, manage, and execute their respective operations with the ultimate goal of conducting their operations injury-free on a daily basis.

It is the responsibility of each contractor and all tiers of subcontractor to adhere to the requirements of this plan. Each contractor and all tiers of subcontractor shall incorporate safety into the planning of each task, assure the safety of their personnel, provide all safety devices necessary for their employees, establish a safe and drug-free work environment, and confirm that their equipment meets the applicable safety standards. Each contractor and all tiers of subcontractors are responsible for any actions of their personnel that may endanger or otherwise expose other participants to potential hazards on the project site.

The Integrated Safety Management System shall be used to achieve these goals. The ISMS is a practical approach to the prevention of accidents with an emphasis on line management responsibility for safety. A central premise is that work planning starts with a focus on the nature of the job to be performed and assessment of the hazards involved in each step. Through the use of self-assessment and feedback contractor, continuous improvement in each contractor's and all tiers of subcontractor's safety process is expected.

Project participants are required to supervise and direct the work, using their best management skills and technical expertise. The contractor will be solely responsible for all work means, methods, techniques, sequences and procedures. This includes all safety precautions and programs in connection with the work, as well as coordinating all portions of the work. Each lower-tier subcontractor is likewise required to be responsible for all safety precautions and programs in connection with the work under the contractor's contractual agreement.

All personnel working on the project, including employees of the general contractor, and all subcontractors, who have been properly trained, have stop work authority for any task that represents an imminent threat to safety. Training is available via an on-line training course. Only the NSLS-II Project Manager (or designee) can authorize a restart of the identified task.

All levels of subcontractors will comply with the requirements of this Environment, Safety and Health Plan.

3.0 PURPOSE/INTRODUCTION

3.1 Definitions

Brookhaven National Laboratory (BNL): A research facility owned by the Department of Energy (DOE) located in Upton, New York

Brookhaven Science Associates (BSA): The prime contractor for operating BNL

Contractor (GC): The General Contractor is responsible for overall construction of the NSLS-II ring building. This is the company with whom BSA has a direct contractual relationship.

Contractor Vendor Orientation (CVO): Mandatory BNL-provided training for all contractor and sub-tiered employees.

Project Manager: This is the GC employee who has overall project controls, including budget and schedule, and has authority to speak for the General Contractor on all contractual matters.

Project Safety Manager: This is the general contractor's senior on-site safety representative.

Project Superintendent: This is the senior GC field representative who has overall day-to-day responsibility for the project.

Subcontractors: All subcontractor management and their employees working on the NSLS-II project

The Plan: This document, the Environment, Safety and Health Plan.

The Project: All work associated with the conventional construction of the NSLS-II ring building.

BSA NSLS-II Project Team: The BSA organization responsible for ensuring the successful completion of the project.

BSA NSLS-II ES&H Manager: A member of the NSLS-II Project Team who has overall environment, safety and health oversight for the project

BSA NSLS-II Construction Safety Engineer: A member of the NSLS-II Project Team having day-to-day construction safety oversight of the project.

3.2 General Information

The objective of this plan is to emphasize that the protection of people, the environment, and property is of paramount importance to the success of this project. To accomplish this objective, the project is committed to implementing the principles and functions of the Integrated Safety Management System described in the DOE Policy 450.4 and discussed in detail in Section 4 of this document.

While it is the responsibility of each individual to work safely, it is ultimately the contractor's and each tier subcontractor's management's responsibility to see that safety and health policies and practices are followed and enforced. The project expects each contractor's and subcontractor's supervisory personnel to be actively involved in promoting the safety and health program that they have agreed to implement on this project.

The project's goal is that of ZERO ACCIDENTS. The contractor and each tier subcontractor's line management are expected to promote this concept and develop, implement, and enforce a safety and health program that will result in a safe work environment. Safety is not to be compromised for production and must be considered an integral part of the work planning process.

3.3 Contractor and All Tier Subcontractor Safety Program

A written Environment, Safety and Health Plan that meets or exceeds the requirements of this Plan must be submitted within three weeks after award of contract for review and approval by the NSLS-II project team.

All subcontractors shall also abide by the Environment, Safety and Health Plan submitted by the General Contractor. Each subcontractor must submit a letter to the GC stating that they understand the requirements of the Environment, Safety and Health Plan and will comply fully with its requirements.

The Contractor and all tier subcontractors shall budget to establish and maintain a safety and health program that meets or exceeds the requirements contained in this Plan and the applicable sections of 29 Code of Federal Regulation (CFR) 1910 and 1926, and 10 CFR 851, Worker Safety and Health Rule.

The Contractor and each sub-tier subcontractor are solely responsible for carrying out their safety and health program. Therefore, the NSLS-II Project requires that the Contractor and each sub-tier subcontractor designate a competent on-site employee to carry out this responsibility. Along with the Contractor and all tier subcontractors' line managers, this employee is directly responsible for ensuring that the safety program and employee actions comply with the minimum safety standards required by this Plan.

4.0 INTEGRATED SAFETY MANAGEMENT SYSTEM

The Project has adopted the Integrated Safety Management System (ISMS) by contract as the overarching philosophy and approach to systematically integrate safety into work activities. The ISMS is the formal, organized process whereby the BSA NSLS-II Project plans, performs, assesses, and improves the safe conduct of work. The ISMS for the BSA NSLS-II Project is based on the fundamental principles and core functions discussed in DOE Policy P 450.4. The contractor and all subcontractors are committed to these fundamental principles and functions through contractual agreement. The use and implementation of this Plan is verified through the self-assessment and independent assessment processes.

The BSA–NSLS-II Project Team, its contractors, and subcontractors are committed to ensuring the health and safety of workers and the public and to protecting the environment. All work shall be performed safely and shall adhere to all applicable laws and requirements. Integral to this being accomplished is the workers' commitment to work safely and to work to the requirements.

4.1 Principles of the Integrated Safety Management System

The fundamental principles described in DOE P 450.4, which are discussed below, are incorporated into the NSLS-II Project's processes to help ensure that facilities are adequately preserved, that work is conducted safely, and that suitable accident preventive and mitigative measures exist.

Worker and Line Management Responsibility for Safety

Line management is accountable for empowering workers with the training and authority necessary to establish and maintain safe operating methods commensurate with their assigned duties. Management expectations are clearly communicated to all personnel, personnel are empowered, their feedback is solicited, the tools necessary to accomplish the work safely are provided, and personnel are held accountable for their actions. Each individual, in turn, is responsible for his or her actions.

Line managers are responsible for training, motivating, and enabling their workers to understand and comply with the Project's commitment to safety, and for ensuring that work is accomplished within the authorization basis. Line managers are also responsible, by personal example and by involving their workers, for providing a working environment in which everyone is dedicated to meeting the commitment to safety.

Clear Lines of Authority

The Project's organizational structure focuses on management and worker involvement, and is centered on work planning and execution. Clear and unambiguous roles and lines of responsibility, authority, and accountability at all organizational levels must be established. Environment, Safety, and Health (ES&H) responsibility will be integrated into the Project work activities, and interfaces for processes and organizations will be clearly established to provide for good understanding and communication.

Personnel Experience, Knowledge, and Skill

The Contractor and each tier subcontractor must commit to using a workforce on the Project that has the ability to work safely and efficiently. Each individual associated with the Project shall possess the experience, knowledge, skills, and abilities necessary to discharge his or her responsibilities. Through the hiring and training process, line managers shall ensure that their workers are competent to safely accomplish the work. Line management must ensure that training and qualification requirements are flowed down to their personnel, and are responsible for the performance of their personnel.

Balanced Priorities

The Project ensures a "Safety First" culture by effectively allocating, training, and monitoring resources to ensure that work is performed safely. A Safety First attitude is a must for all personnel. Stop Work authority is given to each employee to use when he or she believes an activity is unsafe and poses and imminent danger to personnel, property, or the environment. Restart approval is given at the appropriate

management level. Specific job tasks are planned with appropriate worker involvement, and the work plan is required to be followed to ensure safe operation and environmental compliance.

Work and Associated Hazards

Before work is performed, the associated hazards are evaluated and an agreed-upon set of controls is established which, if properly implemented, provides adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

Administrative and Engineering Controls

Administrative controls and engineering controls are essential elements of the ISMS. Wherever feasible, engineered controls are designed into the Project, and administrative controls are used to supplement engineered controls as appropriate. These controls are established through the work planning process.

Authorization Agreement

The conditions and requirements to be satisfied for operations to be initiated and conducted are clearly established and agreed on by the NSLS-II Project Manager, the GC Project Manager, and the management of all tier subcontractors.

4.2 Core Functions of Integrated Safety Management System

DOE P 450.4 describes the core functions of ISMS. These five functions are not independent and not necessarily sequential. Rather, they are linked and interdependent such that outcomes during the accomplishment of one may affect others. In particular, identifying and implementing opportunities for improvement may arise at any stage of the work process. The five functions are *Define the Scope of Work*, *Identify and Analyze Hazards*, *Develop and Implement Hazards Controls*, *Perform Work within Controls*, and *Provide Feedback and Continuous Improvement*.

All Contractor and subcontractor line management shall commit to these core functions of integrated safety management in the manner described below.

Define the Scope of the Work

Defining the scope of work entails identifying and defining **all** the steps, each task and sub-task element, needed to complete a particular job safely. Defining the scope of work is a critical element of the safety management system, since it sets the stage for the scope and depth of hazard identification and analysis.

Identify and Analyze Hazards associated with the Work

Hazard identification includes defining those hazards to workers or property expected to be encountered during the course of performing a particular task, and those that are introduced from concurrent work tasks. A Phase Hazard Analysis/Job Hazard Analysis (PHA/JHA) shall be performed for each task, to address such hazards. There is also a potential that unexpected hazards may be encountered or the nature of the known hazards might change as work activities proceed. Should this occur, the PHA/JHA shall be revised to incorporate the new conditions.

Develop and Implement Hazard Controls

The development and implementation of hazard controls includes identifying controls to prevent and mitigate hazards, establishing the safety envelope (what conditions require what response) and performing periodic hazard assessments.

Confirm Readiness and Perform Work within Controls

Confirmation of readiness is an effort to verify that safety controls have been implemented before starting work. Performing work within controls entails adherence to work controls in a manner such that activities remain within the safety envelope. Readiness assessments are conducted at multiple levels—from each worker assessing his or her readiness to start a task, to whatever is necessary to demonstrate Project readiness to DOE and the regulators.

Provide Feedback on Adequacy of Controls

Feedback and continuous improvement are based on the premise that all work activities can be planned, performed, assessed, and improved. Continuous improvement entails proactive focusing on problem prevention and performance improvement to prevent unsafe practices from occurring. The capability to prevent minor problems from becoming major risks or events relies heavily on feedback from workers; observations from those not directly involved with the work, and adequate metrics to assess trends in performance.

4.3 Roles and Responsibilities for Integrated Safety Management System Implementation

Senior Management

The GC Project Manager has the overall responsibility for assuring a safe workplace and for maintaining safe operations. The Project Manager approves all project plans, ensures implementation by conveying to line management their responsibilities for integration of safety performance into all work activities, and confirms management responsibility for integration of safety performance into all work activities. The Project Manager also has responsibility for evaluating the progress and status of the ISMS and adjusting resources as necessary based on feedback regarding ISMS implementation. This promotes continuous improvement in safety performance, and communicates its importance to the Project's success.

Line Organizations

All Contractor and subcontractor field managers and supervisors constitute the focus of "line manager responsibility" for the protection of workers, the public, and the environment within the ISMS framework for all work conducted by their assigned employees, and visitors in their assigned operating facilities.

Line managers provide the primary operating interface for employees and visitors. Within the framework of the ISMS, they contribute to work planning, pre-job communication of hazards and controls, work monitoring, and evaluation of results.

Effective integration of support from ES&H professionals into line activities is essential to achieving excellence in ISMS. Line management is responsible for defining and providing an adequate level of subject matter expert support, either from its own staff, or from external sources, as appropriate for the particular line organization and ES&H discipline involved.

ES&H Organization

As noted above, effective integration of ES&H into line activities is needed for success of the ISMS. The BSA NSLS-II ES&H Manager is responsible for providing overall policy and guidance on ES&H issues, and for working with the line organizations to make available necessary and agreed-upon input from ES&H professionals and other support. ES&H personnel are responsible for ensuring that the standards, requirements, and ES&H policies are effectively translated into suitable controls for work activities.

Workers

All employees of the on-site contractor and all subcontractors are responsible for becoming knowledgeable of and maintaining awareness of the hazards associated with their work, for contributing to the formulation of hazard controls, and for conducting their work safely in accordance with those controls. They are encouraged to identify ES&H issues in their workplace, to work with their management to provide input for improvements and to resolve concerns, and to exercise stop-work authority in cases of imminent danger to health and safety of workers or the public, or threat to the environment.

5.0 DOE RULE FOR WORKER SAFETY AND HEALTH (10 CFR 851)

The worker safety and health program required by this rule establishes the framework for a comprehensive program that will reduce or prevent injuries, illnesses, and accidental losses by providing DOE contractors and their workers with a safe and healthful workplace. DOE has structured the rule this way for two main reasons: (1) To take advantage of existing and effective comprehensive worker protection programs that have been implemented at DOE facilities and (2) to minimize the burden on contractors by clarifying that they need not establish redundant worker protection programs to protect workers from occupational safety and health hazards. This rule flows down to all BSA contractors and all tiers of subcontractors working at the BNL site.

5.1 Safety and Health Standards

Contractors must comply with the following safety and health standards that are applicable to the hazards at the workplace:

- Title 29 CFR, Parts 1904.4 through 1904.11, 1904.29 through 1904.33; 1904.44, and 1904.46, "Recording and Reporting Occupational Injuries and Illnesses."
- Title 29 CFR, Part 1910, "Occupational Safety and Health Standards," excluding 29 CFR 1910.1096, "Ionizing Radiation."
- Title 29 CFR, Part 1926, "Safety and Health Regulations for Construction."
- American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices," (2005) when the ACGIH Threshold Limit Values (TLVs) are lower (more protective) than permissible exposure limits in 29 CFR 1910. When the ACGIH TLVs are used as exposure limits, contractors must nonetheless comply with the other provisions of any applicable expanded health standard found in 29 CFR 1910.
- American National Standards Institute (ANSI) Z88.2, "American National Standard for Respiratory Protection," (1992).
- ANSI Z136.1, "Safe Use of Lasers," (2000).
- ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes," sections 4.3 and E4.3 (1999).
- National Fire Protection Association (NFPA) 70, "National Electrical Code," (2005).
- NFPA 70E, "Standard for Electrical Safety in the Workplace," (2004).

5.2 Occupational Medicine Program

Contractors must establish and provide comprehensive occupational medicine services to workers employed at a covered work place who: (1) Work on a DOE site for more than 30 days in a 12-month period; or (2) Are enrolled for any length of time in a medical or exposure monitoring program required by this rule and/or any other applicable federal, state or local regulation, or other obligation. A detailed Occupational Medicine Program is found in Section 6.15.

The occupational medicine services must be under the direction of a graduate of a school of medicine or osteopathy who is licensed for the practice of medicine in the state of New York.

Occupational medical physicians, occupational health nurses, physician's assistants, nurse practitioners, psychologists, employee assistance counselors, and other occupational health personnel providing occupational medicine services must be licensed, registered, or certified as required by NY State law.

Contractors must provide the occupational medicine providers access to hazard information by promoting its communication, coordination, and sharing among operating and environment, safety, and health protection organizations.

6.0 CONTRACTOR RESPONSIBILITIES

6.1 Emergency Services and Equipment

If a serious or life-threatening injury occurs, BSA will provide emergency ambulance and fire fighting services. Employees must phone 911 or 2222 from any internal BSA telephone or 631-344-2222 from a cellular phone.

In the event of a less-serious injury, employees will be sent to the NSLS-II on-site medical facility to be treated by the Project nurse. In addition to injury recordkeeping required by OSHA, each subcontractor shall inform the NSLS-II ES&H Manager of any injury requiring first aid and all more serious occupational injuries and illnesses within one hour of the classification of the injury.

6.2 Job-Site Orientation

All Contractor personnel working on the NSLS-II Project will be required to attend an orientation provided by the Project Manager before working at the jobsite.

Newly employed, promoted, and/or transferred personnel shall be fully instructed in the safety practices required by their assignments. All employees must receive orientation prior to starting work. Visitors must also receive orientation prior to leaving the office areas, or be escorted while on the site.

In addition to the contractor's safety and health policies, the orientation must include:

- employee safety requirements and policies specific to the project,
- site-specific safety and health requirements,
- permitting procedures (if applicable), including work permits, hot work permits, etc.,
- hazard communication on a multi-employer work site,
- emergency and medical procedures, and
- other topics as circumstances require.

All employees will complete an Orientation Acknowledgment form at the end of the orientation. A copy will be maintained in the Contractor's project file.

6.3 Security and BNL Site Access

Brookhaven National Laboratory is owned by the Department of Energy and is operated by Brookhaven Science Associates. All personnel entering the site must either be escorted by a BSA employee or have obtained a BNL photo identification badge. Identification badges are obtained by attending the Contractor Vendor Orientation (CVO) given daily at 8:30 a.m.

Badges must be in the possession of the individual at all times, and conspicuously displayed. The Contractor is responsible for collecting badges of all employees who are laid off or otherwise terminated from the project, and returning them to the NSLS-II ES&H Manager.

The General Contractor will ensure that access roads to the site for delivery of equipment and materials are safe and in good condition. Where holes, divots and other low points on the access road occur, the General Contractor will take action to immediately repair the road.

6.4 Disciplinary Policy

The purpose of this policy is to state the Project's position on administering equitable and consistent discipline for unsatisfactory conduct on the jobsite. This policy ensures fair treatment of all employees in

making certain that disciplinary actions are prompt, uniform, and impartial. The primary purpose of any disciplinary plan is to correct the problem, prevent recurrence, and prepare the employee for satisfactory service in the future.

We recognize that employees, on the whole, normally govern their activities while at work in the same high standards of conduct that they use for their personal affairs. But we recognize that errors in judgment may occur and when they do we wish to address them in a fair, impartial, and consistent manner. By using progressive discipline, it is our hope that most employee problems can be corrected in the early stages, thus benefiting both the employee and the Project. Open and clear communications between the employee and the supervisor promotes understanding, and is the key to preclude the need for any disciplinary action.

Disciplinary action may call for any of the four following steps: Verbal warning, written warning, temporary suspension from the Project site, and denial of access to the Project site for a period of one year or more, depending on the severity of the problem and the number of occurrences.

All disciplinary actions are based on incident-free time periods (rolling date). After an active employee has gone for a time period of one year (365-days) without a reoccurrence of any progressive disciplinary action, all prior disciplinary action records will be removed from their personnel file. However, records associated with terminations will not be purged from the files.

All disciplinary actions resulting in suspension or termination shall automatically be reviewed by the appropriate Business Agent (if applicable), the Contractor's representative, GC Project Manager, and NSLS-II ES&H Manager.

Employees terminated for safety violations will not be eligible for re-employment on the Project for 12 months. Employees terminated a second time for a safety violation are ineligible for re-employment.

Appendix A provides the five categories of offenses that require some form of disciplinary action in order to ensure corrective job performance, with only Class V offenses being characterized as the most serious, for which immediate termination will result.

6.5 Operation of Equipment and Machinery

Contractor employees shall be trained in the operation, inspection, and maintenance of the equipment and the safety features and procedures to be utilized during operation, inspection, and maintenance of the equipment. This training shall be based on the equipment operating manual and the hazard analysis for the activity.

Before any machinery or mechanized equipment is brought on site and placed in use for the first time, it shall be inspected and tested by a BSA competent person and certified to be in safe operating condition and documented on a Contractor Equipment Inspection Form (Appendix B).

All machinery and equipment shall be inspected daily (when in use) to ensure safe operating conditions. The Contractor shall designate competent persons to conduct the daily inspections and tests. Tests shall be made at the beginning of each shift during which the equipment is to be used, to determine that the brakes and operating systems are in proper working condition and that all required safety devices are in place and functional. Inspections and tests shall be in accordance with the manufacturer's recommendations and shall be documented. Records of tests and inspections shall be maintained at the site by the Contractor, shall be made available upon request, and shall become part of the official project file. Inspections shall include as a minimum;

- Control and drive mechanism
- Proper fluid levels
- Safety devices
- Hooks and safety clips for cranes, fork lifts, hoists and other lifting devices
- Tire condition and inflation
- Ground conditions, donnage and outriggers (level) for cranes, fork lifts, hoists and other lifting devices

- Load chart and hand signal chart
- Any dirt or contaminants

Whenever any machinery or equipment is found to be unsafe, or whenever a deficiency that affects the safe operation of equipment is observed, the equipment shall be immediately taken out of service and its use prohibited until unsafe conditions have been corrected. A tag indicating that the equipment shall not be operated, and that the tag shall not be removed, shall be placed in a conspicuous location on the equipment.

Machinery and mechanized equipment shall be operated only by designated qualified personnel. It shall not be operated in a manner that will endanger persons or property, nor shall the safe operating speeds or loads be exceeded. Persons who take prescription medication should not operate such equipment if such medication may impair their judgment or reflexes. Utilize equipment only for the purpose for which it was designed and in accordance with the manufacturer's instruction and recommendations. Modifications, extensions, replacement parts, or repairs of equipment shall maintain at least the same factor of safety as the original equipment. Modifications shall be authorized in writing by the manufacturer.

6.6 Evacuation of the Work Area

Contractor employees shall observe and participate in notices to evacuate the work area.

BNL site-wide emergencies requiring site evacuation are signaled by an intermittent siren tone for five minutes. All personnel will be required to evacuate the BNL site via the quickest route or as directed by BSA police or other emergency services personnel.

The GC is required to establish an emergency response procedure for evacuation of the jobsite. All personnel working at the jobsite must be trained in this procedure as part of their initial job orientation.

6.7 Accident Investigation and Reporting

All incidents involving illness/injury or property damage must be immediately reported to the Contractor's Project Superintendent. This official shall immediately notify the NSLS-II ES&H Manager, who will in turn make the appropriate notifications to BSA Management and DOE. Investigations shall be conducted for all events that result in either an OSHA reportable or OSHA recordable event, or result in a Days Away Restricted or Transferred (DART) case. Such incidents will be investigated by the GC Safety Representative or designee and the NSLS-II ES&H Manager or designee, and shall be documented on an Incident Investigation Report (Appendix C). The report must be completed and submitted to the GC Project Manager and BSA project team within 24 hours of the incident. The NSLS-II Project reserves the right to conduct an independent investigation of any incident, and must be granted access to the injured party to conduct interviews. DOE also reserves the right to conduct an independent investigation of any incident.

An incident investigation committee will investigate all major incidents. This includes, but is not limited to, any incident resulting in a medical case, lost-time injury, fatality, or significant damage to property or equipment. The committee will review the incident scene, collect photographs and defective equipment, interview all involved or witnessing parties, review all facts pertaining to the accident, and file a report with the GC Project Manager of the findings and conclusions as well as recommended measures to prevent re-occurrence. The GC will ensure that the scene and any equipment involved in the incident remains in its current condition and that nothing is removed from the site. The incident investigation committee will be comprised of, but not limited to:

- the person(s) involved in the incident,
- the first-line supervisor of the person(s) involved in the incident,
- the superintendent of the employing contractor,
- the NSLS-II on-site safety representative or designee,

- the Contractor Safety Representative or designee, and
- other personnel deemed appropriate by the GC and the NSLS-II ES&H Manager.

6.8 Personnel Protective Equipment

The Contractor is responsible for providing the appropriate personal protective equipment (PPE) in all operations/tasks where there is an exposure to hazardous conditions or where there is the need for using such equipment to reduce hazards to the employees.

PPE and safety equipment shall be tested, inspected, and maintained in serviceable and sanitary condition as recommended by the manufacturer. Users of PPE and safety equipment shall be trained in the use, limitations, inspection, testing, and maintenance of the equipment.

As a minimum, all employees on this project must wear eye protection, head protection, foot protection, and when there is moving equipment, appropriate high-visibility reflective clothing. Other PPE shall be worn depending on the hazard(s) present.

Basic Eye Protection—Employees must wear ANSI Z87 approved safety glasses with sideshields 100% of the time when exposed to hazards from flying particles; molten metal, liquid chemicals, acids, or caustic liquids; chemical gases or vapors; or potentially injurious light radiation.

Contact Lenses—Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments might represent an additional hazard to contact lens wearers. Hazardous environments include, but are not limited to, those in which a respirator may be required or where welding is being performed.

Face Shield and Goggles— When subcontractor's employees may be exposed to splashes, mists, etc., either goggles or a face shield must be worn, depending on the situation. With a face shield, basic eye protection must also be worn.

Welding Shield—When welding, both basic eye protection and hard hats must be worn with a welding shield. This is to protect employees from popping hot slag when the shield is raised and from overhead work exposures. If welding goggles are worn, basic eye protection is not required while welding.

Head Protection—All persons working in or visiting hard hat areas shall be provided with and required to wear protective headgear. Hard hat areas are those with the potential for head injury: all construction-designated areas are considered hard hat areas. All hard hats must be worn with the adjusting device toward the rear.

Hearing Protection—The safety representative or designee will monitor work areas to identify and post high-noise areas and provide appropriate hearing protection.

Foot Protection—All personnel must wear leather ANSI Z41 protective work shoes or boots. No one is permitted to wear sneakers, tennis shoes or athletic shoes of any type, sandals, high heels, or thongs on the project site.

Clothing—Employees shall report to work properly attired. The Project's requirements include:

- Clothing in good repair. (Frayed or tattered clothing can be hazardous to employees and will not be permitted.)
- No tank tops or sleeveless shirts. (Shirts must have at least 2" sleeves and tails must be tucked in at all times.)
- Long pants only. (No short pants, cutoffs, sweat pants, etc.)
- If working around moving machinery, no neckties, gauntlet type gloves, or baggy, loose, or ragged clothing.
- No loose, dangling jewelry. (Jewelry such as rings, watchbands, necklaces, earrings, and the like can cause or contribute to accidents.)

- Shoulder-length or longer hair must be tied back and put under the hard hat or worn in a hair net. (This will keep it from impeding vision, becoming entangled in machinery, or preventing the use of personal protective equipment.)

6.9 On-Site Safety Inspections

The GC Project Safety Representative or designee shall conduct and document daily inspections of the site. An example of an inspection checklist is included in Appendix D. Inspection checklists must be provided to the NSLS-II project staff upon request.

BSA and DOE representatives shall audit and document site safety activities periodically, and communicate any deficiencies to the GC for corrective action.

Subcontractors are to conduct a weekly review of their areas and forward a copy of the report to the Contractor's Project Superintendent and to the NSLS-II ES&H Manager or designee.

Audits/Inspection reports and related abatement actions shall be documented and maintained in the Project's safety file.

Corrective actions of all safety infractions will be assigned to a specific individual with an expected completion date. Subsequent safety inspections will pay particular attention to previously identified infractions and verify that the corrective action plan has been implemented.

6.10 Weekly Tool-Box Meetings

Weekly tool-box meetings will address general issues of safety. This will be the opportunity for individuals on the Project to identify safety issues and concerns of a general nature. It is also the opportunity to coordinate the control of recognized hazards and promote safety awareness. A valuable tool to instill a Safety First culture among employees is to review lessons learned from this job or from another job. Weekly toolbox meetings may be accomplished in a single or multiple sessions and may address different topics for different work crews. The weekly toolbox meetings are to be documented and forwarded to the GC Project Superintendent. Documentation should include the following:

- time and date of meeting,
- attendees (attendees must sign the attendance sheet and include their BNL ID number),
- topics/comments,
- assignments – party responsible/date corrected (if applicable), and
- person conducting the meeting.

The documentation shall be kept on the jobsite and shall be available for audit by BNL.

6.11 Protection of Work Area

The Contractor shall ensure that the work areas and storage areas are conspicuously flagged and barricaded, as needed, prior to initiation of work.

The Contractor shall furnish, post, erect, and install safety devices, equipment, signs, barricades, flagging, and any other item necessary to give adequate warning and caution of hazards, and to provide instructions and directions to workers and the public.

6.12 Working and Storage Areas

Housekeeping is a general indicator of a contractor's performance on site, including safety performance. Each contractor has the responsibility to maintain their area of operations in an orderly condition free of materials that could create slip/trip or fire hazards. In addition, the contractor's supervisors shall ensure a

daily walk-down of their work area is conducted, that any deficiencies are immediately corrected, and the condition of the site is reported to the GC's Project Superintendent.

All materials and equipment in storage, lay-down, staging, or work areas must be properly secured so that they are stable and secure against sliding or collapse. All materials storage and loading/unloading areas must be established at a safe distance from walkways, aisles, and traffic areas to avoid personnel injury should materials slide or collapse.

6.13 Hazardous Material and Hazardous Waste

All contractors shall provide to the GC's Project Superintendent a list of hazardous materials along with a copy of the relevant Material Safety Data Sheet (MSDS) for each material that will be used on the project site. All MSDSs shall be maintained by the GC's Project Superintendent in a notebook in the construction office, and the information will be readily accessible to all employees.

The U.S. Environmental Protection Agency (EPA) ID number shall be obtained for the hazardous wastes produced by the contractors.

All hazardous wastes produced by the Project shall be packaged, transported, and disposed of by a licensed entity. Such loads shall be manifested and a copy of the manifest sent to the GC's Project Superintendent. All hazardous materials must be properly labeled and stored until removed from the project site (by a licensed hazardous waste hauler).

Hazardous materials or hazardous wastes stored in 30-gallon or 55-gallon drums shall be placed on spill containment pads, be properly labeled/placarded, and protected from damage and weather.

Report all accidental releases of a hazardous material or hazardous waste promptly to the GC's Project Superintendent. All spills, regardless of the volume, must be reported to BSA Emergency Services by calling extension 2222 or 911. All reporting will be done by BSA; however, the contractor responsible for the spill will be obligated for all costs incurred as a result of the cleanup effort.

The responsible contractor will properly clean up accidental releases of hazardous materials waste. Cleanup is to be done by properly trained personnel (meeting the requirements of 29 CFR 1926.65 (q)(6)). Hazardous waste from the cleanup must be hauled away by a licensed hauler to an approved waste disposal site permitted to accept such waste. The GC's Project Superintendent must be given a copy of the hauler's manifest and shall retain a copy of the waste transporter's permit and the disposal facility's permit.

Depending on the hazardous materials spilled, the BSA NSLS-II ES&H Manager may require the responsible contractor to hire a certified laboratory to take an appropriate number of soil samples to test at their laboratory. A copy of the results is to be given to the GC Project Manager.

Contractors shall inspect their hazardous material and waste storage areas at least weekly to ensure they are properly maintained. All inspections are to be documented, with records retained in the project files.

The GC shall randomly audit the labeling and storage of hazardous material and waste and the disposal of hazardous waste to verify that all contractors, at any tier, are fulfilling their roles as responsible parties.

6.14 BSA Stop-Work Policy

All personnel (contractors, visitors, and guests) at BNL who have been trained in this policy have the right to stop their own work or the work of others if they deem that the task poses an imminent danger to themselves, their co-workers, property, or the environment. Personnel who have completed CVO are deemed to have been trained in this policy.

There will be **no reprisals** by anyone for issuance of a stop-work order.

To issue a stop-work order if you observe imminent danger, state the following:

"Stop work! You are in imminent danger because..."

Any person receiving a stop-work order must stop work immediately, if that can be done safely, or at the first opportunity to stop safely.

The person issuing a stop-work order **must not** verbally or physically interfere, whether or not the recipients of the stop-work order continue to work. If someone refuses to stop work, the employee issuing the stop-work order will immediately contact his/her supervisor, the GC's Project Superintendent, or the BSA on-site safety representative.

The person initiating a stop-work order also shall contact his/her own supervisor.

After the work is stopped, the recipient of the stop-work order notifies his/her supervisor that (s)he has been ordered to stop work and describes the reason why the work was stopped.

The GC's Project Superintendent, along with the BSA NSLS-II ES&H Manager, determines the conditions that must be met before work may resume.

Authorization to restart work may only be given by the NSLS-II Project Manager (or designee) and only after corrective actions and safety reviews are completed.

6.15 Occupational Medicine Program

To ensure the continued health of employees, the GC maintains a comprehensive occupational medicine program (OMP) in full compliance with all provisions of Section 8, "Occupational Medicine," of Appendix A of the Federal Regulation 10 CFR 851 "Worker Safety and Health Rule." This program is under the direction and control of a NYS-licensed occupational medicine provider. This program covers all GC employees and all employees of all subcontractors. Subcontractors may wish to use their own program in lieu of the GC's program. In that event, those programs must be reviewed and approved by the NSLS-II ES&H Manager.

The Occupational Medicine program covers employees who

- work at BNL for 30 or more days in a 12-month period, or
- work for any length of time at BNL and are required by statute to be enrolled in a medical or exposure monitoring program.

The GC affirms that these services are fully compliant with all provisions of Section 8 ("Occupational Medicine") of Appendix A of the Federal Regulation 10CFR851, including the following provisions:

- Services are provided by an occupational medicine provider that plans and implements the occupational medicine services and
- is under the direction of a physician licensed in the state of New York, and
- is staffed by health care professionals with valid New York State licenses in their respective professions.

OMP Information

OMP Name:

Address:

Phone: #

Fax #:

The OMP determines the content of the worker health evaluations in accordance with current sound and acceptable medical practices and all pertinent statutory and regulatory requirements. At a minimum, these services include:

- Medical surveillance and medical certification examinations in compliance with all OSHA, DOE, or other statutory or contractual requirements for such examinations applicable to the work to be performed and the type and level of workplace exposures. Frequency of such examinations will be determined by statute, contractual requirement, or best medical practice as determined by the OMP.
- Prior to the employee's 30th day of work at BNL, an occupational medical examination shall be conducted for workers involved in physically demanding tasks, tasks that involve potential exposure to workplace hazards, or exposure to adverse environmental conditions.
- Evaluation at the time of potentially work-related illness, potentially harmful exposure, or injury at BNL to determine work-relatedness, any need for medical restrictions or work removal, and referral for definitive care, if indicated.
- Return-to-work evaluations where a worker has been absent for 5 or more workdays due to illness or injury.
- Restricted duty as medically indicated.
- Creation and retention of a medical record that complies fully with all requirements specified in paragraph 8(f) of Appendix A 10CFR 851 for each employee for whom the OMP has provided occupational medicine services.
- Verbal and written communication to each employee as to the purpose, nature, and results of all medical evaluations and tests performed, and documentation of this communication in the medical record.
- Timely submittal of the results of health evaluations to BSA where such information will facilitate the mitigation of worksite hazards. Such communications will not include the release of confidential, personally identifiable medical information, other than in exceptional instances where there is a compelling, overriding public health or public safety need.

The following occupational medicine services may also be provided by the OMP, except where the OMP determines that they are not applicable or not feasible. Such a determination is documented in writing for each service that will not be provided, with sufficient explanation:

- Participation in worker protection teams, as well as worker safety and health team meetings and committees as defined, respectively, in paragraphs 8 (e)(2) and 8(d)(3) of 10CFR 851.
- Case management of ill or injured workers to facilitate rehabilitation and safe return to work.
- A health promotion program to include disease and risk factor screening for the major causes of morbidity and mortality within the employee population, if determined to be cost effective. If deemed not cost effective, the OMP's decision and its basis must be documented in the outline of comprehensive occupational medicine services.
- The GC's health and disability insurance claims data (de-identified) is used by the OMP in determining the major causes of morbidity and mortality within the GC's workforce, if such information is available to the GC.
- Cost effectiveness shall be judged by available evidence, published medical studies, demonstration projects at other institutions, or internal analyses.
- Review and approval of the medical and behavioral aspects of the GC-sponsored or the GC-supported programs (if they exist).
- Employee Assistance Programs (EAPs)
- Alcohol and substance abuse rehabilitation programs
- Wellness programs

- If the work requires immunization, a hazardous waste program, or involves exposure to blood-borne pathogens, the OMP shall review the medical aspects to assure their conformance to applicable guidelines.

The contractor provides to the OMP:

- Access to information (de-identified) from health, disability, and other insurance plans appropriate for determining the major causes of morbidity and mortality among the contractor's employees.
- Information on the physical demands and working conditions that are associated with each contractor employee's job.
- Employee job-task and hazard analysis information, including actual or potential worksite exposures of each employee. BSA will provide potential radiological hazard exposure information, if applicable.
- Notification when an employee has been absent because of an injury or illness for more than 5 consecutive workdays.
- Referral of employees about whom the supervisor has concerns regarding their ability to safely perform job duties.
- The opportunity to participate in worker protection teams, as well as worker safety and health team meetings and committees (where applicable).

For every Occupational Medicine Program there must be an accompanying acknowledgment by the physician.

PHYSICIAN'S ACKNOWLEDGMENT

I, _____, affirm that the services which I provide are
(Name of Physician)

fully compliant with the provisions of Section 8 (Occupational Medicine) of Appendix A

of the Federal Regulation 10CFR851, including the following:

- Plan and implementation of the occupational medicine services.
- I am a physician licensed in the State of New York.
- My office is staffed with health care professionals with valid New York State licenses in _____, _____, and _____.
- I will provide medical surveillance and medical certification in compliance with OSHA, DOE, or other statutory or contractual requirements.

(Signature of Physician)

(Date)

6.16 On-Site Medical Services

BSA employs a full-time staff of emergency medical technicians who can provide emergency medical care and ambulance transport to any one of several area hospitals. They can be reached by calling 2222 or 911 from any BSA internal telephone or 631-344-2222 from a cell phone.

The GC will maintain a competent emergency health professional (registered nurse, licensed practical nurse, or a physician's assistant) on site whenever there are 50 or more employees on the jobsite. This professional will maintain a fully functional first aid station and attend to minor injuries. The professional

will coordinate back-to-work approval in conjunction with the Occupational Medicine provider. The health professional will receive standing orders from the Occupational Medicine Provider.

6.17 Sanitation

Contractors shall establish and maintain basic sanitation provisions for all employees on the NSLS-II construction site as specified in the following paragraphs.

Drinking Water

An adequate supply of drinking water shall be provided in all places of employment. Cool water shall be provided during hot weather.

Only approved potable water systems shall be used for the distribution of drinking water. Drinking water shall be dispensed by means that prevent contamination between the consumer and the source.

Portable drinking water dispensers shall be designed, constructed, and serviced to ensure sanitary conditions; shall be capable of being closed; and shall have a tap. Containers shall be clearly marked as “**DRINKING WATER**” and shall not be used for other purposes. Water shall not be dipped from containers.

Use of a common cup (a cup shared by more than one worker) is prohibited without the cup being sanitized between uses. Employees shall use cups when drinking from portable water coolers/containers. Unused disposable cups shall be kept in sanitary containers and a waste receptacle shall be provided for used cups.

Toilets

When sanitary sewers are not available, one of the following facilities shall be used: chemical toilets, recirculation toilets, combustion toilets, or other toilet systems as approved by state/local government.

Provisions shall be made to assure that there are sufficient toilet facilities available for both male and female employees. The number of toilet facilities shall be in accordance with 29 CFR 1926.51(c)(1).

Each water closet shall occupy a separate compartment with a door that can lock from the inside, and walls or partitions, between fixtures, of sufficient height to assure privacy.

Provisions for routinely servicing and cleaning all toilets and disposing of the sewage shall be established before placing toilet facilities into operation. The method of sewage disposal and location selected shall be in accordance with federal, state, and local health regulations.

6.18 Drug Free Workplace

Policy Statement

The unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace. A single violation of such prohibition shall result in the offending individual being removed from the jobsite and recommendation of participation in an approved drug abuse assistance or rehabilitation program, and/or reporting to the civil authorities for criminal prosecution.

All employees shall abide by the rules of this program, and shall notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 10 days after such conviction.

Program Elements

An ongoing drug-free awareness training program includes:

- Mandatory participation by all employees
- Classroom and/or toolbox discussions that shall include:

- The dangers of drug abuse in the workplace
- Distribution and discussion of the Contractor's policy of maintaining a drug-free workplace
- Any available drug counseling, rehabilitation, and employee assistance programs
- The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace
- Intervention Procedures involving the employee and supervisor
- Information on identification - signs and symptoms
- Corrective actions
- Personnel actions - program enforcement, disciplinary options, and employee assistance
- Legal or criminal actions
- Disciplinary actions up to and including termination
- Drug abuse or rehabilitation programs that are available
- Brookhaven National Laboratory's Contracting Officer shall be notified in writing within 10 days after receiving notice of an employee's conviction under a criminal drug statute for a violation occurring in the workplace. Notification shall include the position title of the employee and the appropriate personnel action to be taken within 30 days under the requirements of this Program.

6.19 Substance Abuse Program

Introduction

BSA and the BSA Project Team are committed to providing a safe workplace for the workers assigned to the NSLS-II construction project, promoting high standards of employee health, and fostering productivity that satisfies their quality expectations. Consistent with the intent and spirit of this commitment, the NSLS-II project has established a substance abuse testing specification for the project with the goal of maintaining a work environment that is free from the effects of the use of illegal drugs and alcohol.

This specification is not intended as a substitute for the GC's complete written substance abuse policy. Normally, such policies include other important features, including, but not limited to, an employee education and awareness program, a supervisor-training program, and an employee assistance program.

Program Requirements

All tier contractors must have and enforce a written substance abuse program incorporating the testing requirements, terms, and conditions set forth below. This plan is applicable to all employees, current and prospective, in order to be eligible to perform work at the project site. The contractor must comply with this plan. Suppliers, vendors, and visitors are subject to confirmation of their abstinence from the possession or use of substances indicated in this plan. A copy of the substance abuse program must be submitted to NSLS-II Project management for approval prior to commencement of work on the project site.

The substance abuse program must apply to the employees of all tier contractors working on the project site. This includes workers, new hires, replacement workers, and supervisory personnel. No employee or prospective employee of a contractor shall be permitted to work on the project site unless such employee has submitted to testing as required by this plan and unless the results of such testing are negative as hereinafter defined. Contractors must provide the BSA NSLS-II ES&H Manager with a monthly summary report of the substance abuse program compliance.

All contractors must train their respective employees in methods that will allow them to recognize substance abusers. Supervisory employees shall be trained to take action, and to confront a substance abuser in a manner consistent with generally accepted safety training procedures.

The BSA project management reserves the right to audit any substance abuse program required by this plan, to verify compliance, upon 24-hour notice to the GC of intent to audit. BSA project management shall have free right of access to all relevant records of the contractor and their subcontractors and suppliers for this purpose, provided such record disclosures are within the scope of guidelines pertaining to the confidentiality of employee records.

The contractors' pre-engagement employees who receive a positive test result shall immediately leave the project site. Transportation of employees receiving a positive test result is the direct responsibility of the employing contractor. Furthermore, pre-engagement employees receiving a positive test result shall not be permitted to return to the project site earlier than 90 days from the date of the positive test. At that time the employee may begin the process outlined by this specification again.

If a current employee who tested positive qualifies and successfully completes the contractor assessment /substance abuse treatment program, a program approved by the Project, the employee will be exempt from the 90-day requirement if said employee agrees to the following:

- submit to substance abuse testing as described in this specification and receive a negative test result; and
- agree to random substance abuse testing not to exceed one test per 500 work hours over a 3-year period from the date of return to the project site.

Testing Requirements

The BSA Project Management requires:

- pre-engagement drug and alcohol testing;
- drug testing for reasonable suspicion of illegal drug use;
- post accident / incident drug and alcohol testing; and
- drug testing following the discovery of illegal or unauthorized drugs or paraphernalia.

All drug testing must be conducted by a laboratory certified by the National Institute of Drug Abuse (NIDA), with test results interpreted by a licensed medical review officer.

The initial screen tests for alcohol shall be performed by using either a saliva test or a Breathalyzer test comparable to the type used by state or local law enforcement officials. Furthermore, alcohol confirmatory tests shall be performed by using either a blood alcohol test or a Breathalyzer test comparable to the type used by state or local law enforcement officials. The collection site(s) and collection practices shall meet the requirements outlined by NIDA.

Substance abuse testing shall be conducted in accordance with specified requirements found in 10 CFR 707. Initially, the substances that will be screened will consist of the "NIDA 5." However, the Project reserves the right to expand the test panel to include the following substances, should the need be established:

10-Panel Test Plus Alcohol

Substance	Threshold Limits	
	Initial Limit	GC/MS Confirmation Limit
Alcohol	0.04%	0.04%
Amphetamines	300 ng/ml	300ng/ml
Cocaine metabolites	300 ng/ml	150 ng/ml
Marijuana metabolites	20 ng/ml	10 ng/ml
Opiate metabolites	300 ng/ml	150 ng/ml
Phencyclidine	25 ng/ml	25 ng/ml
Barbiturates	300 ng/ml	100 ng/ml
Benzodiazepines	300 ng/ml	100 ng/ml
Methadone	300 ng/ml	100 ng/ml
Methaqualone	300 ng/ml	200 ng/ml
Propoxyphene	300 ng/ml	200 ng/ml

Definitions

Positive Tests: Test results that indicate the presence of legal or illegal substances at or above the threshold limit as set forth in this plan.

Negative Tests: Test results indicating that legal or illegal substance are at levels below the threshold limits as set forth in this plan.

Pre-engagement Testing: Testing for all substances other than alcohol as set forth in this plan conducted by subcontractors (including lower-tier subcontractors) for their employees or prospective employees within 120 days prior to their appearance on the project site.

For-Cause Testing: Testing for all substances set forth in this plan conducted by the respective subcontractor for their employees whose behavior on the project site causes either the Project Manager/Project personnel or the respective subcontractor supervisory personnel to reasonably conclude that such behavior may result from substance abuse.

Post-Accident / Incident Testing: Testing for all substances set forth in this plan conducted by the respective subcontractor for their employees involved in an injury producing accident or a "near miss" in which injury is avoided or in events resulting in damage to property as determined by the Project Manager/ Project personnel or the respective subcontractor supervisory personnel.

7.0 JOB-SPECIFIC WORK REQUIREMENTS

7.1 Phase Hazard Analysis

A Phase Hazard Analysis (PHA) shall be developed for each major phase of the Project to be performed on site. The PHA shall identify the task and the steps necessary to complete the task, the hazards associated with each step of the task, and the means to protect the workers performing the task from those hazards.

Examples of major phases of the project include but are not limited to:

- excavation,
- steel erection,
- concrete placement,
- interior wall erection, and
- finishing work.

Supervisors and employees are responsible for developing the PHA of their work activities. The supervisor is also responsible for:

- ensuring that hazard analyses are developed and reviewed by the employee before work begins, and
- seeking advice of the safety officer or designee as appropriate.

The Contractor shall submit all PHA's to the NSLS-II ESH Manager (or designee) for review and approval. The completed and approved PHA shall be reviewed with all personnel involved in the task. This can be done as a tool-box talk or job preparation meeting. The PHA shall be updated whenever there are changes in the work plan, changes in material used, or a new crew or subcontractor is assigned to conduct the work. PHA worksheet/guidelines are presented in Appendix E.

7.2 Compressed Gas

General Safety Requirements

- Ensure that containers are not defective or leaking any product.
- Prescribed stamped markings on the container shall be located on the shoulder of the cylinder.
- The labels applied by the gas manufacturer or authorized supplier/vendor to identify the container contents shall not be defaced or removed.
- Containers may be painted by the gas suppliers to permit the suppliers to help recognize their contents and to segregate them more readily in their handling operations. However, the primary identifier is the container label. Color shall not be used to exclusively identify container content.
- Containers not bearing a legibly written, stamped, or stenciled identification of the contents shall not be used.
- Compressed gas cylinders shall not be used as rollers, supports, or for any purpose other than to contain and use the content as received.
- The container valve shall be kept closed at all times (charged or empty), except when the container is in use.

Transporting Cylinders

- Compressed gas containers shall not be rolled in the horizontal position or dragged. A suitable hand truck, forklift, or similar material handling device should be used, with the container properly secured to the device.
- Containers shall not be lifted by using the container cap or magnets. In cases where hand trucks are designed to lift containers using the cap, the containers shall not be lifted higher than 6 inches, or for longer than it takes to properly position the container on the hand truck.
- Ropes, chains, or slings shall not be used to suspend containers unless provisions have been made on the container for appropriate lifting attachments, such as lugs. Where appropriate lifting attachments have not been provided on the container, suitable cradles or platforms to hold the containers shall be used for lifting with the containers being adequately secured.

Storage

- Containers are not to be stored near readily ignitable substances, such as gasoline, oil, or scrap material.
- All compressed gas cylinders shall be stored and used valve-end up.
- The cylinders shall be secured at all times to prevent instability. Chains are the preferred method of securing the containers; however, heavy rope or heavy-gauge wire may also be used.
- Valve protection caps shall always be in place and hand tight, except when cylinders are in use or connected for use.
- Flammables and oxidizers shall be stored with a minimum separation of 25' or with a one hour rated five foot high fire barrier in between.

7.3 Confined Spaces

A "confined space" means a space that:

- is large enough and so configured that an employee can bodily enter and perform assigned work,
- has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry), and
- is not designed for continuous employee occupancy.

A "permit-required confined space" has one or more of the following characteristics:

- contains or has the potential to contain a hazardous atmosphere,
- contains a material that has the potential of engulfing an entrant,
- has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section, or
- contains any other recognized serious safety or health hazard.

The GC shall have a written Confined Space Entry Program that complies with OSHA and BNL standards. The program will require the Competent Person (as defined by OSHA) to:

- establish procedures and practices for safe entry and to determine if a permit is required,
- have air monitors to check concentration of oxygen, explosive/flammable gases and the specific contaminants of concern (e.g., hydrogen sulfide in sewer utility holes),
- test and monitor conditions to identify and evaluate hazards,
- prevent unauthorized entry,

- provide adequate non-entry retrieval systems (tripods, winches, harness and ventilation equipment)
- station an attendant outside permit spaces during entry,
- post procedures to summon rescuers and prevent unauthorized personnel from attempting rescue, and
- develop a system for preparing, issuing, using, and canceling entry permits.

All personnel who enter into a confined space must be trained in the hazards and procedures for entry. They must be able to recognize signs and symptoms of exposure. They must also be familiar with any emergency equipment in the confined space. Where a hazardous atmosphere is or may be present, all entrants must also be trained in the use of respiratory protection.

For entry into non-permit spaces, a job safety analysis, work guideline, or a standard operating procedure is required identifying necessary controls for atmospheric testing, continuous forced ventilation, and certification of safe atmosphere. Entry into a permit-required space requires a confined space permit (Appendix F). Permits must include an identification of the confined space: its hazards, a list of authorized entrants, the purpose of their entry and the date and duration of their permits; the current attendants and entry supervisor; and both the results of tests performed and any measures necessary to isolate the permit space and eliminate or control the hazards. The permit must also describe the acceptable entry conditions, emergency equipment, and the means to summon rescue and emergency services.

Operations involving a confined space entry require an evaluation of work by the contractor and the BSA NSLS-II ES&H Manager to classify the space as permit-required or non-permit.

Retrieval equipment shall be provided to facilitate non-entry rescue for all permit-required spaces unless evaluation of the permit-required confined space determines that the use of retrieval equipment creates greater health and safety hazards. In this case, rescue services shall be notified that entry into the confined space will be necessary to perform rescue operations.

7.4 Electrical Safety

Conduct installation, service, and maintenance or construction of electrical equipment in accordance with requirements in 29 CFR 1926 Subpart K, applicable requirements in 29 CFR 1910 Subpart S, and the National Electrical Code, including NFPA 70E.

Ensure electrical work is performed by qualified persons. All electricians performing work "on or near" energized circuits must be fully trained in NFPA 70E requirements, Lock-Out/Tag-Out (LOTO) and also in CPR or other resuscitative techniques. (Appendix J contains a sample LOTO program.) Electricians who are members of the IBEW and are in Local 25 and have in their possession a certification from the local have been deemed to be trained.

Provide temporary lighting hung from insulators rated for the circuit's voltage. Remove temporary lighting when no longer required.

Provide a ground fault circuit interrupter for cord sets, receptacles, and electrical tools including plug and cord connections to generators and equipment for employee use.

All unfinished circuits are to be tested for energy, capped with wire nuts, and pushed into the box by an electrician. All employees are to be instructed that any wires not capped are assumed to be live, and are to be reported to an electrician.

Provide three-wire extension cords, continuous length without splices, and designed for hard or extra-hard use. Protect electrical extension cords from pinch points, sharp edges, pedestrian or vehicle traffic, or other potentially damaging configurations. Do not fasten extension cords with staples, hang with nails, or suspend on wires. Arrange extension cords in a manner that avoids creating tripping hazards.

Notify the BSA NSLS-II ES&H Manager prior to any work being done near overhead lines. Overhead lines shall be de-energized and grounded or other protective measures (guarding, isolating, insulating, etc.)

shall be provided, before work is performed in the vicinity of overhead lines. This preparation will be accomplished by BSA Plant Engineering personnel.

Any vehicle operated in proximity to overhead lines shall maintain the following minimum distance:

- 10 ft (305 cm) for voltage of 50 kV or below;
- 10 ft (305 cm) plus 4 inches (10 cm) per 10 kV for voltage greater than 50 kV
- 4 ft (122 cm) for vehicles in transit, with its structure lowered, for voltages 50 kV or below, with clearance increased 4 inches (10 cm) for every 10 kV over that voltage.

Live parts to which an employee might be exposed shall be put into an electrically safe work condition before an employee works on or near them, unless the deenergizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations.

Energized parts that operate at less than 50 volts to ground and containing less than 10 Joules of stored electrical energy are not required to be deenergized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

The phase hazard analysis (see Section 7.1) is utilized to ensure workers understand their role in the work to be performed, as well as what others involved in that project or task will be doing. Supervisory approval for “working on or near” or “working hot” shall be given in the Permit (Appendix K). Working “on or near” or “working hot” requires approval by the Contractor’s Project Superintendent, the BSA NSLS-II ES&H Manager, and the BSA Electrical Safety Officer. The Contractor shall follow the guidelines presented in NFPA 70E, Standard for Electrical Safety in the Workplace.

See Section 7.13 for additional information on LO/TO and “working on or near” energized electrical components.

7.5 Working from Heights, Fall Protection

Each contractor must provide appropriate 100% fall protection for its employees working **6 ft or more** above the work surface. This includes all tasks associated with steel erection. The Contractor’s Project Superintendent must fully evaluate the work conditions and environmental factors (including seasonal weather changes) before selecting the appropriate fall protection system (active, passive, or a combination of measures, as appropriate). Such evaluation is to be included in the hazard analysis for the task.

Employees shall be trained in the selection and safe use of fall protection systems before the equipment is used as required by 29 CFR 1926.503. Employees who receive fall protection training are to be certified in writing by the trainer. The written certification record shall contain the name or other identify of the employee trained, the date(s) of the training, and the signature of the person who conducted the training.

Workers within a Controlled Decking Zone must also be equipped and wearing appropriate fall protection.

Under no circumstances will anyone ride a load suspended from a crane or ride the “headache ball.” Walking up or sliding down columns is strictly forbidden. Violation of these safety rules will result in immediate termination from the job with no ability to return to BNL.

Types of Fall Protection Systems

- **Personal fall arrest system (PFAS):** used to arrest an employee’s fall from a work level. It consists of an anchorage, connectors, and a body harness and will include a lanyard, deceleration device, lifeline, or a combination of these. Anchorage shall be capable of sustaining static loads, applied in the directions permitted by the PFAS, of at least 5,000 lbs per user attached.

- **Restraint:** The full body harness is used as a component of a restraint system to prevent the user from reaching a fall hazard. Anchorage must support a minimum of 3,000 lbs per person attached.
- **Work Positioning:** The full body harness is used as a component of a work positioning system to support the user at a work position. Anchorage must support at least 3,000 lbs per person attached.
- **Warning line system:** a barrier erected to warn employees that they are approaching an unprotected edge. It also designates an area in which work may not take place without the use of a guardrail, personal fall arrest system, or a safety net to protect employees.
- **Guardrail system:** a barrier erected to prevent employees from falling to lower levels.
- **Controlled access zone:** an area in which certain work (e.g., overhead brick laying) may not take place without the use of guardrail, personal fall arrest, or safety net system, and access to the zone is controlled.
- **Controlled decking zone:** an area in which certain work (for example, initial installation and placement of metal decking) may take place where access to the zone is controlled.
- **Safety monitoring system:** a system in which a competent person is responsible for recognizing and warning employees of fall hazards.
- **Safety net system:** can be used when workplaces are more than 25 ft above the ground, water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or a safety harness is impractical.

7.6 Scaffolds

All scaffolds and platforms must meet the following requirements:

General Requirements

OSHA requires that scaffolds are to be erected, moved, altered, and dismantled only under the supervision and direction of a qualified Competent Person experienced in scaffold erection and maintenance. The scaffolding Competent Person shall not have other responsibilities that could take his or her attention from the scaffolding work.

The Competent Person shall assure that all personnel engaged in the erection and/or dismantling of scaffolding have been trained in the proper scaffold procedures and precautions. The Competent Person will also assure through tool box training at the site that all personal working on or from the scaffolds have been trained in the proper procedures and precautions with using scaffolds.

Each working level or platform of scaffolds must be in compliance with OSHA 29 CFR 1926, BNL SBMS, PE ESH-802 and be completely decked and have handrails, midrails, and toeboards installed. If for some reason a platform or working level cannot be equipped with standard handrails or completely decked, safety harnesses must be worn and properly tied off to an acceptable attach point meeting OSHA requirements.

Chain guardrails on scaffolding are not allowed.

If scaffolds will be higher than 30 ft with a working load exceeding 50 lb/ft², a licensed professional engineer must complete sealed and signed design drawings, including load calculations. Examples are scaffolds erected for plasterers, masons, or any other trades who routinely store material on the platform.

Supported scaffolds with a height to base width (including outrigger supports, if used) ratio of more than four to one (4:1) shall be restrained from tipping by guying, tying, bracing, or equivalent means. Restraints shall be at a minimum of every 30 feet horizontally and every 26 feet vertically for scaffolds 3 ft or greater in width or every 20 ft vertically for scaffolds less than 3 ft in width.

Scaffolds must be inspected prior to each shift and tagged for the workers. Tagging must designate the requirements of the user and the conditions of the scaffold by the qualified Competent Person.

Contact the GC Project Manager if any special scaffolding issues arise.

Rolling Scaffolds

No one is to ride on a rolling scaffold while it is being moved.

All materials and tools must be secured prior to moving a rolling scaffold.

No rolling scaffolds will be utilized to support other scaffolds.

All rolling scaffolds are to have lockable wheels.

Scaffold Planking

Paint using a stencil or stamp scaffold planks within 12" of each end or edge to denote use for scaffold decking only.

Use only 2" x 10" or 2" x 12" scaffold grade material for scaffold planking.

Scaffold Tagging

The scaffold tagging procedures are as follows:

- Under the direction of the qualified Competent Person, the crew that erects the scaffold must complete and attach the appropriate scaffold tag.
- The scaffold tag must be placed at eye level on or near the access ladder so it is easy to locate and plainly visible.
- A Competent Person needs to ensure that the scaffold is erected properly and the tag attached is proper and completely filled out.
- If the scaffold needs to be altered in any way, the person who signed the tag must be contacted to authorize the change and re-tag if necessary.
- An untagged scaffold must not be used.
- A Competent Person must inspect it prior to each shift.
- Tagging Color System:
 - A green tag is completed and attached by the erecting crew to scaffolds that have complete handrails, midrails, toeboards, and decking.
 - A yellow tag is completed and attached to scaffolds that cannot be erected with all the components complete. The yellow tag allows the erecting crew to note what portion of the scaffold is incomplete and cautions the user. A yellow tag also informs the user fall protection is required.
 - A red tag means the scaffold is being dismantled, is not yet completely erected, or for some reason not safe and shall not be used.
 - Under rare circumstances non-traditional scaffolding techniques such as needle beam scaffolds, ladder scaffolds, suspended scaffolds etc, which may be required must also comply with OSHA requirements and will be tagged as determined by the NSLS-II ESH Manager (or designee).

7.7 Excavations and Trenches

The digging permit process is utilized to provide for the safety of personnel and protection of existing utilities and facilities during work activities requiring excavations.

Prior to excavation, the estimated location of utility installations (e.g., sewer, telephone, water, fuel, electric lines) underground and in walls, floors, etc. shall be determined and protected from damage or displacement. The BSA Plant Engineering group shall be contacted to locate the installations and issue the digging permit (Appendix G). The digging permit shall be posted at the work site.

A competent person shall be identified and designated by the GC Project Manager. Appendix H is an example of a letter indicating the name of the competent person. A copy of this letter is also posted at the jobsite.

Excavation Plan

The proposed method to prevent undermining existing structures and to protect personnel from potential cave-ins is described below.

- The soil for this project is to be considered type-C, unless another classification is determined by one of the methods described in 29 CFR 1926 Subpart P Appendix A, and all cave-in protection shall conform to the applicable OSHA requirements.
- Methods intended for supporting existing utilities and maintaining surface appurtenances such as roadways, sidewalks, and other anticipated encumbrances are briefly described below.
- A contingency plan for notifying Plant Engineering upon suspicion or discovery of any contaminated soils, live munitions, or other materials shall be implemented.
- For excavations 5 ft or deeper or where there is a risk of cave-in, where sloping is to be used as cave-in protection, the slopes shall be no greater than one to one and one-half, rise to run, or approximately 34 degrees from the horizontal.
- Satisfactory lumber/timber shall be used (i.e., badly cracked/broken timber shall not be used for bracing or support of excavations). All shoring material(s) must comply with OSHA requirements.
- An adequate number of ladders shall be present in the excavation for access. OSHA requires no more than 25 ft of lateral travel between ladders in excavations 4 ft or greater in depth. Ladders shall extend 3' above grade.
- Excavated materials shall be placed a minimum of 2 ft away from the excavation cut in order to decrease additional loading on the support system as well as decreasing the potential for excavated material to slough off into the cut.
- Inspections shall be done and documented by the competent person to monitor the condition of the excavation and support system. Inspections shall be conducted daily at the start work, as necessary during the day, and after a rain storm or other hazardous situations arise.
- A plan for proper de-watering and an excavation plan that fully describes the method used to protect workers from cave-in is required to be submitted.
- Proper permits shall be filled out and approved before beginning work (i.e., digging, confined space entry permits, etc.).
- There shall be barricading against people and vehicles to eliminate the possibility of introducing any hazards

Cave-In Protection Equipment

- Cave-in protection equipment shall be provided if 5ft or deeper. For excavations greater than 20 ft in depth, the protective systems shall be designed and approved by a registered professional engineer with a specialty in soil mechanics.
- Where shoring, shielding, or systems other than sloping are proposed, there shall be a submittal of manufacturer's or engineer's data on the system to be used, the depths of the excavations where it shall be applied, and the system configurations to be utilized.
- Sub-type of soil as defined by the manufacturer's or engineer's specifications shall be determined; and there shall be a submittal of soil type determinations and the system

configuration selections to the NSLS-II ES&H Manager for approval prior to work being performed in the excavation/trench.

7.8 Fire Protection

Only approved containers and portable tanks shall be used for storage and handling of flammable and combustible liquids. Approved safety cans or Department of Transportation approved containers shall be used for the handling and use of flammable liquids in quantities of 5 gallons or less (this does not apply to those liquids which are extremely hard to pour, which may be handled in original containers). For quantities of 1 gallon or less, the original container may be used for storage, use, and handling of flammable liquids.

Containers of flammable and combustible liquids shall be tightly capped when not in actual use. Containers shall be approved DOT with functioning self closing tops and flame arrestors. Use of "residential" type flammable liquid containers are prohibited.

Flammable liquids may be used only where there are no open flames or other sources of ignition within 50 ft of the operation, unless conditions warrant greater clearance.

All sources of ignition shall be prohibited in areas where flammable and combustible liquids are stored, handled, and processed. Suitable No Smoking or Open Flame signs shall be posted in all such areas. At least one BC-rated portable fire extinguisher with a minimum 12-pound rating shall be mounted at the entrance to the area where flammable liquids are handled or stored.

Areas where flammable or combustible liquids are transferred in quantities greater than 5 gallons from one tank or container shall be separated from other operations by 25 ft distance or by construction having a fire rating of at least 1 hour.

During vehicle refueling operations, appropriate grounding precautions must be taken to prevent sparks from causing a fire.

A fire extinguisher, rated not less than 10B, shall be provided within 50 ft of wherever more than 5 gallons of flammable or combustible liquids are being used on the jobsite. This does not apply to the integral fuel tanks of motor vehicles.

Portable fire extinguishers with at least a 2A rating are to be deployed in every 3,000 ft² of floor space with a maximum travel distance of 100 ft.

BSA will provide fire fighting services. Contractor employees must use an in-house phone to dial 911 or 2222 for emergency response. If using a privately owned cell phone, the reporting personnel must call 631-344-2222.

"Red Flag" days exist when weather conditions pose a severe threat of brush and wildland fires. On such days, the BSA Fire Rescue Group will make an announcement to the laboratory population prohibiting all outside work, e.g., welding, flame cutting, etc. Indoor work that does not pose a fire threat to the outdoors may continue.

Prior to performing any cutting, welding, burning, brazing, or other activities which may be a source of heat or ignition, the Contractor must obtain a hot work permit (Appendix I) from the BSA Fire Rescue/Group. This permit must be conspicuously posted in the area of the work. If a general permit for the project is obtained, it may be posted in the construction office or trailer.

Wildfire Danger

Portions of the work will be performed in a wildland area of BNL, where brush fires are a real concern. The contractor shall ensure that the conduct of operations minimizes the potential of the occurrence of wildland fires.

Preventing the parking of vehicles on grassy areas with engines running, and control of disposal of smoking materials, is the responsibility of the contractor's Safety Representative.

Ensure gasoline-engine-driven portable generators and air compressors are equipped with spark arresters and that personnel are aware of fire break names if calls to the Fire Department [Ext. 2222 or (631) 344-2222] become necessary.

7.9 Hand and Power Tools

Hand and power tools shall be used, inspected, and maintained in accordance with the manufacturer's instructions and shall be used only for the purpose for which designed.

Power tools designed to accommodate guards shall be equipped with such guards when in use. Reciprocating, rotating, and moving parts of equipment shall be guarded if exposed to contact by employees or otherwise create a hazard.

Tools and equipment showing evidence of safety hazards shall not be brought on site. Should hazards become evident after work is initiated, remove the tool from use, clearly indicate the tool is not to be used, and take the tool from the site at the end of the work shift.

Each subcontractor will color code their power tools and extension cords for easy identification and facilitate inspection. An acceptable method for identification is to use colored electrical tape on each end of the cord. The GC Project Manager will maintain a master list of contractor ID markings.

7.10 Hazard Communication

Purpose

The purpose of this hazard communication program is to inform NSLS-II project employees and all contractor employees of known chemical hazards that may exist in the workplace.

Application

This program applies to chemicals known to be present in the workplace in such a manner that employees may be exposed under normal conditions, non-routine tasks, or foreseeable emergencies.

This hazard communication program relies on Material Safety Data Sheets (MSDS) from suppliers for purposes of hazard determination.

Program Summary

The major elements of this program are as follows:

- labels and other forms of warning,
- Material Safety Data Sheets from suppliers,
- employee information and training,
- list of hazardous chemicals known to be present in the workplace,
- methods for informing employees of hazards of non-routine tasks, and
- methods for informing contractor employers of hazards their employees may be exposed to while working on the project.

Labels and Other Forms of Warning

Each container of hazardous chemicals shall be labeled, tagged, or otherwise marked with:

- the identity of the hazardous chemical(s), and
- appropriate hazard warnings.

Labels and other forms of warning shall be legible and in English, and shall be prominently displayed or readily available in the work area during each shift.

Material Safety Data Sheet

An MSDS shall be kept for each hazardous chemical known to be present in the workplace.

MSDSs are kept in the construction office and are readily accessible by employees during each work shift.

The GC Project Manager is responsible for maintaining MSDSs in a complete and up-to-date manner.

Training and Information

All employees shall be trained according to a written hazard-communication training plan that is part of the company's overall hazard communication program.

Training shall extend to non-routine tasks, as necessary, and to foreseeable emergencies. All employees shall be trained on any revisions to this program.

A typical training program is included in Appendix L.

Revisions

This program shall be amended as changes in work operations, new materials or processes, or new information dictate.

7.11 Heat and Cold Stress**Heat Stress**

Heat stress is a name given to a collection of health hazards that can occur as a result of strenuous work in hot, humid environments. The effects range from minor discomfort to life-threatening implications.

The cause of heat stress is:

- metabolic heat: When we work, our body produces heat.

We LOSE most of that metabolic heat to the environment by:

- sweat (evaporation), and
- wind cooling (convection).

When environmental and/or work condition prevents losing enough metabolic heat, health consequences result = heat stress. The major conditions make us more susceptible to heat stress are:

- hot and humid weather, and
- PPE blocks evaporation and wind.

BSA provides environmental monitoring for Heat Stress conditions in the late spring, summer, and early fall. These notifications can alert workers of environmental conditions, that when mixed with strenuous work, make the worker susceptible to heat stress. Personnel assigned to the NSLS-II construction project will abide and adhere to the precautions concerning work and rest regimens determined by the BSA Industrial Hygiene Group. These instructions follow the ACGIH guidelines as required by 10 CFR 851.

Cold Stress

Prolonged exposure to freezing or cold temperatures can result in serious health problems such as trench foot, frostbite, and hypothermia. In extreme cases, including cold-water immersion, exposure can result in death. Danger signs include uncontrolled shivering, slurred speech, clumsy movements, fatigue, and confused behavior. If these signs are observed, call for emergency help.

These factors contribute to cold stress:

- Cold temperatures: A cold environment forces the body to work harder to maintain its temperature.
- High or cold wind: Wind chill is the combination of air temperature and wind speed. For example, when the air temperature is 40°F and the wind speed is 35 mph, your exposed skin receives conditions equivalent to the air temperature being 11° F.
- Dampness and cold water: Cold air, water, and snow all draw heat from the body. Cold stress can be brought about by temperatures in the 50s coupled with some rain and wind.

Anyone working in a cold environment may be at risk for cold stress. However, older adults may be at more risk than younger adults, since older people are not able to generate heat as quickly. Certain medications may prevent the body from generating heat normally. These include anti-depressants, sedatives, tranquilizers, and some heart medications. Persons with existing medical conditions that are aggravated by cold temperatures or who are taking these types of medication should be evaluated by the OMP before extended periods of outdoor work in cold weather.

Prevention and Protection

- In cold, wet, and windy conditions, workers need to wear proper clothing, including layers so they can adjust to changing conditions.
- Workers need to take frequent short breaks in warm, dry shelters to allow the body to warm.
- Try to schedule work for the warmest part of the day.
- Use the buddy system – work in pairs so that one worker can recognize danger signs.
- Drink warm, sweet beverages (sugar water, sports-type drinks) and avoid drinks with caffeine (coffee, tea, sodas, or hot chocolate) or alcohol. Eat warm, high-calorie foods such as hot pasta dishes.

7.12 Hoisting and Rigging

All rigging equipment, including cranes, fork trucks, extending fork trucks, slings, and hardware brought onto the BNL site for the first time must be inspected by the BSA rigging inspection supervisor. All operators must be qualified and must present their operating license to the inspector when requested. All inspection documents must be available to the BSA rigging inspector, and such documents must be current. Subsequent inspections will be made by the operator and user of the equipment.

Perform hoisting and rigging activities in accordance with 29 CFR 1910 Subpart N, 29 CFR 1926 Subparts H and N, the DOE Standard for Hoisting and Rigging, and the ANSI B30 and B56 Series. Provide for review by GC Project S&H Manager, documents of certification that contractor's hoisting and rigging equipment meets the requirements in these documents. If an inspection certificate expires while the equipment is on site, re-inspect the equipment and update the inspection certificate before continuing work activities.

Equipment operators/riggers, including alternates, shall be qualified to perform their assigned functions. Qualifications shall include physical, knowledge, and skills proficiency based on job function and a valid license for the piece of equipment.

All operations that require hoisting and rigging shall have a PHA and/or an appropriate safety checklist completed prior to beginning work to ensure safety and compliance.

Each lift shall be reviewed to determine if the lift is classified an ordinary lift or critical.

All lifts, with the exception of off-loading material from the delivery vehicle or moving equipment from one location to another provided the equipment is not raised more than 3 ft above the ground and does not pass over any other vital equipment, must follow an approved lift plan. Such plans are reviewed and

approved by the BSA rigging inspector. Ordinary lift plans usually take 2 days to approve; critical lift plans usually take about a week for approval (depending on the complexity of the lift).

Critical Lift

A lift will be considered critical when any **one** of the following conditions exists:

- The load item is unique and, if damaged, would be: (1) irreplaceable; or (2) not repairable and is vital to a system, facility, or project operation.
- The cost to replace or repair the load item or the delay in operations of having the load item damaged would have a negative impact on facility, organizational, or DOE budgets to the extent that it would affect program commitments.
- The lift involves more than one crane or other motorized lifting device lifting a common load.
- The lift is 85% or more (mobile crane) or 75% for steel erection, or 90% or more (fixed crane) of the rated capacity.
- The load requires exceptional care in handling because of size, weight, close-tolerance installation, high susceptibility to damage, or other unusual factors.
- The lift has a gross weight over 50 tons.
- Collision, upset, or dropping could result in significant release of hazardous material or other undesirable conditions.

There are other conditions which **might** constitute a critical lift and should be evaluated by the Subcontractor. Such conditions include:

- Lifts where the load could fall on pipelines or vessels containing flammable gases or liquids, or which may result in a release of hazardous materials to the environment.
- Lifts in tight spaces.
- Lifts involving non-rigid objects like tank shells.
- Lifts with lifting points are below the center of gravity of the load.

The Critical Lift Evaluation Form (Appendix M) must be developed by the GC, and all reviews/approvals must be obtained prior to the lift being made.

Required attachments to the Critical Lift Plan include:

- Crane operator certification – All crane operators shall possess a valid NYS Department of Labor (DOL) Crane Operator's Certificate of Competence or equivalent certification if accepted by the NYS DOL. The crane operator's certification must be up to date. All operator certifications must be attached to the plan or be on file.
- Type, size, capacity, engineered designs, and manufacturer of shackles, hooks, jacks, rollers, come-a-longs, spreader bars, and slings
- Type, size, capacity rating, manufacturer, capacity certificates, and monthly inspection reports for all cranes and other lifting equipment
- Lift geometry and free body diagrams to illustrate the individual tensions of each sling involved in the lift, and any shift of weight when the load is lifted
- A complete rigging diagram must be attached to the critical lift plan. The rigging diagram must include the entire rigging process and the following minimum information, when it applies:
 - Type and capacity of lifting equipment
 - Crane boom length, radius, and location of outriggers

- A plot of the path of travel including all vertical and horizontal clearances from such items as adjacent equipment, power lines, and other encumbrances or hazards
- Location, size, and capabilities of lifting lugs, slings, spreader bars and other rigging accessories, as well as the method of attachment
- Position of load in relation to the boom to show hook clearance and distance between the boom and the load
- Description, size, capacity, and location of miscellaneous equipment such as dollies, jacks, hand wrenches, rollers, etc.
- Method to determine that the location where the crane is to be placed is on stable ground prior to the placement of lifting mats or cribbing
- Location of mats and cribbing used before, during, and after the lift
- Location and orientation of equipment
- Location of underground lines (utility lines, electrical duct banks, cables, etc.), abandoned vessels and tanks, and foundations

Examples of an acceptable Critical Lift Plan are available from the NSLS-II ES&H Manager, upon request.

Ordinary Lift

Any lift that does not meet the definition of a critical lift is considered an ordinary lift. The lift plan must include the following information:

- Description of lift, including weight, dimensions, center of gravity, and objects to be lifted
- Hoisting and rigging equipment with capacities
- Rigging sketches/drawings

Ordinary lift plans must be reviewed and approved by the BSA Rigging Inspector.

Generic Lift

Generic lift plans can be prepared for lifts that occur on a routine basis, such as removing equipment and material from a delivery vehicle and landing it on the ground near the truck, and moving material from the ground level to an upper level using an extending fork truck (e.g., LULL). Generic plans are prepared and approved at the start of the job and will remain in effect for the duration of the job or until there is a change of conditions which require the plan to be revised. An example of a generic lift plan is included in Appendix M.

Safe Lifting Practices

- Determine the weight of the load before designing the method that will be used to lift it. Consider whether vessels will contain fluid, sludge, internal equipment, etc. These items can add significantly to the nominal weight and can create dynamic motion.
- If possible, distribute the load evenly on all legs of a sling.
- When using multiple leg slings, keep in mind that the load is not always divided equally.
- The four-leg slings shall be rated as two-leg slings, since it cannot always be determined that all legs will be loaded equally. Other multiple-leg slings should be given due consideration for possible uneven loading.
- Check choker rotation to eliminate jerking or slipping while upending or laying down.
- When fastening chain hoists, or snatch blocks to permanent structures, verify that the structure is strong enough to support the load.
- Always refer to the manufacturer's specification chart for safe working loads of shackles.

- Never replace the shackle pin with a bolt; only the proper fitted pin shall be used.
- The crane rated loads do not account for the weight of rigging accessories, such as blocks, auxiliary boom head, hooks, slings, spreader bars, jibs, material handling equipment, and other elements of lifting tackle. The combined weight of such items must be added to the total weight.
- The maximum safe working load of cranes is determined from static loads. The capacity charts do not take into account impact loads due to the dynamic motions of the load or crane.
- Are softeners required to reduce cutting to the slings?
- Conduct a detailed investigation to identify all possible interference in the vicinity of the work whether overhead, at grade, or underground.
- Prior to lift, develop a method of unhooking and hooking up the load.
- Always assure that rigging is placed to assure proper orientation of the piece in its final position.
- Surveying equipment may be needed to insure that loads remain within vertical and horizontal limits and to assure stability during the lifting operation.

Safety Precautions for Lifting in Tight Spaces

- Plot in detail the location of the crane and/or other equipment with respect to the work, including the location of outriggers.
- Establish limits of allowable motion for the boom in both the vertical and horizontal directions for each crane location in order not to damage existing facilities.
- Devise and provide means to protect existing operating facilities. Mechanically protect small protrusions on operating equipment, such as valves, instrumentation, brackets, etc., which could be damaged if contact is made with the load.
- Consider shutting down and depressurizing operating equipment that could be jeopardized by the lift.
- Use tag lines to stabilize the load during the lift.

Method of Attachment and Handling

- If attachment points or lifting lugs are provided on the piece, verify that they are intended for handling operations, to prevent damage.
- What are the manufacturer's care and control restrictions of the object to be lifted during handling the entire piece and not a component?
- Are there any requirements for shipping skids or other handling devices and their availability?
- Review the sequence of proper assembly or disassembly when the structure consists of components.

Lifting Lug Requirements

- Lifting lugs must be engineered to withstand the load plus an additional 125% of the load as a safety factor.
- All engineering of the lugs must be done by a professional engineer of the appropriate discipline.
- Welds on both old and new lifting lugs must be magnetic-particle tested to ensure soundness.

Matting Requirements

- Matting must be made of through bolted hard wood, or heavy duty 12" X 12" crane timbers.
- Matting must be thoroughly inspected before use.

Ground Stability

- Ascertain the load carrying capacity of the soil and beware of recently excavated and backfilled areas or areas with weak soils having limited bearing capacity. Examine the rigging diagram to verify that cranes, dollies, and trailers are adequately supported and that the diagram includes cribbing or mats under the crane and outriggers where required.
- Check the entire path of movement during the lift for all holes, rocks, and soft ground.
- Check all load restrictions on floors, structures and access roads.

Tag Lines

- Always use a tag line even for smaller lifts unless the tag line increases the hazard. It is much easier to maintain control of the lift than to regain control when it is swinging or spinning.
- There shall be no knots in the trailing end of tag lines.

7.13 Lock-Out/Tag-Out (LOTO)

Policy

It is BNL Policy that working on or near energized electrical circuits will only be allowed when all methods available to perform the work in a de-energized state have been evaluated and determined to be infeasible. Working on or near energized conductors is subject to the restrictions and provisions of the Standard for Electrical Safety in the Workplace (NFPA 70E), and the BNL SBMS subject area Electrical Safety.

The use of the LO/TO Program is to prevent an unexpected operation or release of energy of electrical or electronic equipment. The unexpected starting of motors may injure persons working on them, or unexpected energizing of equipment can produce an electrical shock and/or damage to the equipment. The LO/TO Program combines the use of tags and locks, or other electrical or physical systems to lock out power to the equipment while it's broken, or being worked on.

Locking and tagging key points are proven methods of controlling the release of energy or hazardous materials, and an important way of safeguarding workers who operate or repair machines or processes in the plant. This document defines LO/TO, lists specific procedures to follow for LO/TO, define responsibility for LO/TO, and show the importance of both education and discipline in these procedures.

A Lock-Out/Tag-Out program shall be included in the Construction Environment Safety and Health Plan that complies with OSHA and is tailored to BNL's LOTO program. A sample Lock Out/Tag Out Program is presented in Appendix J.

Introduction

Most accidents happen around machinery of some type. Often, the accident involves electrical shock, burns, or exposure to hazardous materials or moving machinery. These accidents share one thing in common: the uncontrolled release of energy.

To protect yourself and your co-workers from danger in the workplace, you must understand that energy, left uncontrolled, can be very dangerous. Energy, simply defined, is the capacity for doing work. Kinetic (moving) energy is the force caused by the motion of an object, such as a spinning flywheel. Potential (stored) energy is the unseen force inside an object when not moving, such as a spring under tension. There are many sources of energy that can provide power to machinery. The Phase Hazard Analysis (Section 7.1) identifies specific hazardous energy sources. These may include:

- Gravity
- Electrical
- Mechanical

- Chemical
- Hydraulic
- Pneumatic
- Thermal
- Nuclear

A LOCK-OUT is simply a locking device, such as a padlock, placed on a power source to prevent the release of hazardous energy that could set a machine in motion or otherwise endanger an employee working on the machine. Locks may be used with a lock-out device that holds an energy control point, such as a switch, lever or valve, in the off position, making it impossible to operate.

A TAG-OUT is a written warning tag telling all others not to operate a switch or valve that could release hazardous energy or set a machine in motion. The tag-out is placed prominently on the switch or lever so as not to be missed.

Responsibility

Locking and tagging key points are proven methods of controlling the release of energy or hazardous materials, and an important way of safeguarding workers who operate or repair equipment, or machines, and processes in the plant. This document lists specific procedures to follow to properly LO/TO, and show the importance of both education and discipline to these procedures.

It is the responsibility of the on-site GC supervisor to enforce the LO/TO procedure as well as provide the necessary equipment to comply in all respects with the procedure. Transferred employees shall be instructed by their supervisor in the purpose and use of lock-out/tag-out procedure. Supervisors shall be responsible for enforcing the specific lock-out/tag-out procedures listed below.

- Production and support departments shall be responsible for being knowledgeable of and adhering to this procedure. No locks shall be removed from equipment without first consulting the Maintenance Department.
- A LO/TO shall only be removed by the person who implemented it, or in rare circumstances if that person is not available, by a committee of knowledgeable personnel per written procedure.
- If more than one individual is required to lock-out or tag-out equipment, they shall place their own lock and tag on the affected equipment in such a way as to be certain the equipment is locked out. If the affected equipment cannot accept multiple locks or tags, a multiple LO/TO hasp shall be used.

Equipment

LO/TO equipment shall consist of the following and be controlled and distributed by the on-site GC supervisor:

- Padlocks. Sufficient quantities of padlocks; each lock to have an individual key, and one master key controlled by maintenance supervision.
- Multiple lock tongues. To be used in case more than one department is involved in a job.
- Danger/Warning tags. To be used wherever it is necessary to warn maintenance employees and operators of a repair.

When to LO/TO

Most equipment is designed with safe switches that disable the equipment for minor repair or calibration during normal operation. In general, these switches provide adequate protection for minor repair that is routine, repetitive, and necessary to the normal use of the equipment. LO/TO procedures shall be used for the following situations:

- Major repairs or overhaul
- When working alone, out of visual contact of the controlling switch

- Any time there is danger of injury from an unexpected release of energy
- Any situation that threatens an employee's safety

LO/TO Procedures

The following are specific procedures to be followed for LO/TO:

- Notify all affected areas and employees of the impending lockout situation, the reason for it, and the estimated start and duration times.
- Equipment shutdown and isolation. Place all switches in the "off" or "safe" position. Disconnect sources of power, ensuring all sources of both primary and secondary power to the equipment are interrupted.
- Dissipate residual energy. Shutting down equipment does not mean there is no energy left in it. Check for trapped pressure or residual electricity in the system.
- LO/TO all in-line points of control. In most cases, this may be more than one place, or more than one lock, if several people are working on the equipment.
- Lock-out verification. Take nothing for granted. Verify that the locked-out switch or control cannot be overridden. Test the equipment to be certain that the locked-out switch is de-energized and not simply malfunctioning. Press all start buttons or valves to see if the equipment starts. Ensure the system you are working on is the same one that has been locked out.
- Perform the work scheduled. Try to foresee all possible hazards. Ensure the new/repair work does not bypass the lockout and reactivate the system.
- Lock and/or tag removal. All locks and tags shall be left in place until work is completely finished. This is especially true when more than one employee is working on the equipment. A lock is never to be removed except by the person who placed it there unless emergency removal is required as stated below.

NOTE: Only immediate supervisors are to authorize emergency removal of a lock or tag. The individual who applied the tag must be notified that the tag is being removed.

- Equipment start-up. Make a final safety check before restarting equipment, to be certain it is safe to operate. Make sure of the following:
 - All tools and other items have been removed.
 - All machine guards are returned to their proper position.
 - All electric, hydraulic, pneumatic, or other systems are properly reconnected.
 - All employees are clear of equipment.

Many of the LO/TO procedures appear to be common sense, and they are. Following them will ensure safe operation calibration, maintenance, and repair of equipment and/or processes, without dangerous surprises or injury.

Working On or Near Energized Circuits

It is the policy of BSA that, except under extreme circumstances, work shall not be done on energized circuits.

Justification must be made to the NSLS-II Project Management, of the need to work on energized circuits. The Contractor will arrange for the issuance of a "Working On or Near" Permit as required by the SBMS subject area Electrical Safety. See Appendix K for a sample Energized Electrical Work Permit. The Contractor shall give BNL a minimum of two business days notice of any requirement to "Work On or Near," to allow time for the BNL permitting process. Working on or near operations that only involve testing, diagnostic work, and/or service tasks on equipment for voltages less than 600 volts AC to ground may be covered by a testing, troubleshooting, and voltage monitoring energized work permit, which may cover the entire project period. Operations involving "Working On or Near" for voltages greater than 50

volts AC to ground may require a specific "Working On or Near" permit for each work situation required. Work will proceed when the "Working On or Near" permit is completed and all parties performing the work have been informed of the hazards involved and what PPE is to be worn. An authorized supervisor from the contractor who is performing the work and a BNL-designated Line Manager must sign the permit before any work can be performed.

Work with voltages less than 50 volts (in BSA Range "A") is not considered working on or near energized conductors. Energized parts that operate at less than 50 V to ground are not required to be de-energized if there must be no increased exposure to electrical burns or to explosion due to electric arcs. BSA will issue energized work permits.

Energized work permits shall address, as a minimum, **all** of the following elements:

- A description of the circuit and equipment to be worked on and their location
- Justification for why the work must be performed in an energized condition
- A description of the safe work practices to be employed
- Results of the shock hazard analysis
- Determination of shock protection boundaries
- Results of the flash hazard analysis
- The Flash Protection Boundary
- The necessary personal protective equipment to safely perform the assigned task;
- Means employed to restrict access of unqualified persons from the work area
- Evidence of completion of a job briefing, including a discussion of any job-specific hazards (include in Phase Hazard Analysis)
- Energized work approvals by the NSLS-II Project Management and the Chairman of the BSA Electrical Safety Committee

For all energized work, regardless of the voltages, the appropriate personal protective equipment shall be worn.

Work performed on or near energized circuits performed by qualified persons related to testing, troubleshooting, voltage measuring, etc., is permitted without an energized work permit, provided appropriate safe work practices and personal protective equipment in accordance with NFPA 70-E is used.

Education and Discipline

The key to worker safety is education. The purpose of this document is to ensure that everyone understands the importance of LO/TO and how to recognize when it is in use. These elements shall be covered during initial contractor/vendor orientation and during the pre-job and periodic "tool-box" talks. By educating all employees to the importance of following proper safety procedures, a safer working environment can be ensured.

As with all safety procedures, a fair, uniform enforcement of discipline must be in place. Employees are responsible for their own safety, the safety of their fellow employees, and the safety of the facility. Violating LO/TO procedures is a major safety violation and will subject the employee to immediate discipline.

BNL shall have the right to request that the Contractor provide the appropriate documentation that clearly indicates the qualifications and training of any and/or all employees performing such work.

The Contractor shall provide his own locks (types specified by BNL), lockout devices, red tags for Lock-Out/Tag-Out of energy sources(s) and personal protective equipment. A logbook shall also be maintained and kept in a designated area assigned by BNL.

- In order to comply with this Policy, the Contractor shall ensure that all employees who may be required to "Work On or Near" electrical circuits within the BNL AC Distribution System and all associated equipment shall be authorized employees. An authorized employee is deemed as an individual who has been qualified in the skills and knowledge related to the service, maintenance, construction and/or operation of electrical equipment and installations, and has received safety training on the hazards involved, including the wearing of the appropriate personal protective equipment (PPE).

7.14 Respiratory Protection

The Contractor will determine which respirator type or class will offer adequate protection, based on:

- the respiratory hazard(s) to which the worker may be exposed,
- the workplace and user factors that have the potential to affect respirator performance and reliability,
- his or her informed professional judgment (based on the material safety data sheet or personnel air monitoring results), and
- the scientific literature.

The Contractor shall provide respirators in accordance with the following:

- If contractor employees are required to wear negative or positive pressure, tight-fitting respirators, they shall have been medically evaluated, and the completed medical evaluation shall be retained in the GC Project files.
- Ensure respirator wearers have completed the respirator quantitative fit testing and respirator training. Training documents shall be retained by the GC.
- Provide respirators and cartridge type specified to protect worker from exposure to identified or suspected hazards as specified in the hazard analysis.
- Provide breathing air, if required. Submit data to the GC Site Superintendent demonstrating the compressed breathing air quality supplied to the air respiratory protections systems meets the requirements of ANSI/CGA G7.1, Commodity Specification for Air.
- Provide optical corrections for appropriate respirators.
- All respirators shall be certified by the National Institute of Occupational Safety and Health (NIOSH).

7.15 Sources of Radiation

Lasers

Only lasers that are Class 2, 3A, or 3R will be permitted on the construction site.

Only qualified and trained employees will be assigned to install, adjust, and operate laser equipment. Proof of qualification of the laser equipment operator will be available and in possession of the operator at all times. The GC shall have the training documentation on file or readily available.

Areas where lasers are used shall be posted with standard laser warning placards. Only those devices labeled as Class 2 or 3a, or 3r (**no greater than 5 milliwatts**) shall be used.

Never intentionally stare into the laser beam.

Never intentionally aim the beam at oneself or another person, particularly in the facial area.

The beam will be turned off when not in use.

Avoid mirror-like surfaces when directing the laser beam. A reflected beam can act like a direct beam on the eye.

Areas where lasers are used shall be posted with standard laser warning placards. These can be obtained from the BSA Laser Safety Officer.

Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off.

When it is raining or snowing, or when there is dust or fog in the air, the operation of laser systems will be prohibited where practicable; in any event, employees will be kept out of range of the area of source and target during such weather conditions.

The laser unit in operation should be set up above the heads of the employees, where possible.

Ionizing Radiation Sources

The NSLS-II Project Management must be notified in advance of all sources of ionizing radiation (e.g., Troxler Density Gauges, radiography sources, etc.) brought to the site. Contractors who use these sources in the performance of work at BNL shall demonstrate that they are properly licensed by the State of New York to own and use these sources. These sources shall be used and controlled consistent with the BNL Radiological Control Manual and NYS Industrial Code Rule 38 (NY Labor Law section 27, General Business Law Section 483 part 38), Ionizing Radiation Protection.

https://sbms.bnl.gov/SBMSearch/ProgDesc/RadCon/RadCon_PD.cfm

and sitewide radiological control procedures.

Work with radiation sources will be performed by competent persons trained in the use of radiological devices and in the hazards associated with them.

- All work with these sources of ionizing radiation shall be authorized through a BSA Work permit and/or Radiological Work Permit (RWP).
- The Facility Support Representative will determine if a RWP is required.
- The NSLS-II ES&H Coordinator will be made aware of the intent to use radiation sources.
- Appropriate BSA radiological postings will be maintained while the radiation source is in use.
- Only authorized and trained personnel will be allowed access to the radiologically controlled area.
- Appropriate dosimeters will be worn at all time while in the area and maintained in accordance with the RWP

7.16 Industrial Hygiene Monitoring

All work on the project shall be done within the occupational exposure limits for Industrial Hygiene hazards set in OSHA 29CFR1926, 29CFR1910, and American Conference of Governmental Industrial Hygienists (ACGIH) *Threshold Limit Values*® (TLV). These hazards include, but are not limited to, chemicals, lead, silica, asbestos, beryllium, noise, non-ionizing radiation, and heat stress hazards on the project). Compliance with the OSHA Permissible Exposure Limits and ACGIH *Threshold Limit Values*® shall be determined by representative personnel exposure monitoring and dosimetry conducted by the General Contractor or GC representative. The details of the project's exposure monitoring equipment, methods, and monitoring strategy are included in this Environment, Safety and Health Plan.

If data are available to support the supposition that real-time monitoring is not necessary (i.e., data from a previous job or in peer-reviewed literature showing that neither the ACGIH nor OSHA exposure limits are exceeded), then such data must be included with this Environment, Safety and Health Plan, and reviewed and approved by either the BSA Industrial Hygiene Group or the NSLS-II ES&H Manager.

The GC or GC representative will provide qualified monitoring and hazard assessment personnel to conduct all Industrial Hygiene monitoring. In addition, personnel who conduct exposure monitoring on workers who handle, disturb, or remove friable asbestos-containing material will maintain training and certifications required by the NYSDOL Industrial Code Rule 56 and USEPA. Copies of all monitoring personnel certifications are included as part of this Environment, Safety and Health Plan.

The GC or GC representative shall monitor with calibrated equipment using analytical methods approved by NIOSH or OSHA, and will have the analysis conducted by a laboratory certified for Proficiency Analytical Testing by the American Industrial Hygiene Association (AIHA), or by the use of National Institute of Standards and Testing (NIST)-traceable calibrated direct reading instrumentation. Prior to use in the field, all instrumentation used for surveys shall be calibrated in compliance with the manufacturer's specification.

Copies of all equipment calibration, field sampling sheets, laboratory analysis reports, and hazard assessment evaluation reports shall be submitted to the BSA IH Group or the NSLS-II ES&H Manager within 5 days after the receipt of results from analytical laboratories or within 5 days after analysis by direct reading instruments, meters, or monitors. The monitoring equipment to be used on this project is listed on the attached table.

Materials and conditions that require exposure monitoring include, but are not limited to:

- Asbestos
- Beryllium
- Chemicals, adhesives, or lead
- Carcinogens
- Confined spaces
- Natural hazards in the environment (for example, heat stress)
- High noise levels
- RF/microwave
- Static magnetic fields
- Silica (from grinding, drilling, core boring, jackhammering of concrete, masonry, mortar etc.)

7.17 Penetrations

Concrete and/or masonry penetrations are of specific safety concern at BNL. It is BNL policy that the Contractor ensures safe penetration into or through any existing concrete or masonry surface.

BNL SBMS instructions, ES&H standards, and Plant Engineering policies and procedures shall be followed, including the completion of appropriate Penetration Permits and the provision and use of utility locating/detecting equipment.

In order to comply with these guides, the Contractor shall provide trained "Authorized Employees" and shall submit, for NSLS-II review and approval, the name and type of the utility locating/detecting equipment to be used, as well as the specific names of the trained personnel who will perform the locating task with this equipment and who will execute the penetration work.

Non-aggressive penetrations cannot be executed without first using utility locating/detecting equipment and obtaining approval by NSLS-II.

Aggressive penetrations cannot be executed without first using utility locating/detecting equipment, followed by the completion and approval of an NSLS-II Aggressive Penetration Permit.

7.18 Steel Erection

The erection and assembly of structural steel is perhaps one of the most hazardous aspects of a construction project. Typical hazards involve material handling, working from heights, welding, and flame cutting.

The OSHA Standard 1926 Subpart R applies to work on this project with the following notable exceptions

- All steel work greater than 6 feet above the next lower level will require 100% fall protection.
- Fall protection within a Controlled Decking Zone (CDZ) is required

The steel erection contractor (usually a subcontractor to the steel supplier) must prepare and have approved by the NSLS-II ES&H Manager a comprehensive steel erection plan prior to erecting the first piece of steel. The plan must contain as a minimum the following information:

- The sequence of erection;
- Material deliveries, material staging and storage areas;
- Coordination with other trades on site;
- Description of crane selection and placement procedures including evaluation of soil conditions prior to crane deployment;
- Site preparation;
- Pathways for over head and suspended loads, and methods to designate the lift areas and pathways;
- Critical Lifts;
- Description of erection activities and procedures;
- Hazards associated with weather causing cessation of steel erection activities;
- Description of fall protection procedures that will be used on site;
- Description of procedures to prevent objects from falling off the structure at the site (other than steel being hoisted);
- Any non routine tasks to be performed;
- Certification that each worker has received training for performing steel erection operations;
- A list of qualified and competent persons (for steel erection and associated activities);
- Rescue procedures. BNL Fire/Rescue (F/R) Group will provide rescue operations. Before erection can commence, the F/R group must conduct a walk-through of the facility and identify the quickest means to access the site, and the placement of rescue equipment, and the ambulance. Depending on the nature of the construction site, the F/R Chief may require that an emergency drill be conducted prior to commencing actual work.

The steel erection plan may be included in the Phase Hazard Analysis of the general contractor's Construction Environment, Safety and Health Safety Plan. Additional hazards associated with steel erection must be identified in the PHA along with mitigating measures to be taken by the General Contractor or the Steel Erector. Typical hazards include crane and lifting operations, rigging, protection of holes and openings in the decking.

All documentation relating to the erection of steel including training records and tool-box talk attendance and topics must be maintained by the General Contractor and subject to inspection by the NSLS-II ES&H Manager or his designee.

7.19 Concrete and Masonry Operations

Concrete and masonry operations shall be conducted according 1926 subpart Q, Concrete and Masonry Construction. As stated in the NSLS II Phase Hazard Analysis, safety is a primary consideration and as such all protruding rebar and anchor bolts shall be capped or otherwise protected to eliminate any impalement hazard.

In addition to the general PPE required at this site, all pump truck hose handlers shall wear a face shield over their required safety glasses. Impervious gloves and overshoes (worn over their safety shoes) shall be worn by all concrete workers during pouring operations.

All formwork, precast panels and shoring shall be prepared by a qualified designer and be inspected by that qualified engineer prior to the pour.

Limited Access Zones (LAZ) shall be established around all masonry construction on the side of the wall not scaffolded. The LAZ will be entered only by the workers performing masonry wall construction. The LAZ shall remain in place until the wall is adequately supported.

All concrete and masonry operations shall comply with the NSLS-II requirement of the six (6) foot fall rule.

8.0 ENVIRONMENTAL PROTECTION AND WASTE MANAGEMENT

The following sections provide environmental protection and waste management requirements for construction activities associated with the NSLS-II project.

8.1 Stormwater Pollution Prevention and Control

Prior to mobilization to the site, perform an inspection of equipment containing liquid systems including, but not limited to, bulldozers, backhoes, bobcats, drill rigs, trucks, hoists, and cranes, to ensure no leaks exist. Verify hoses, tubing, and hydraulic lines are in good operating condition. Make all necessary repairs before delivery of equipment or vehicles to the site. The use of biobased hydraulic systems is encouraged.

Perform daily inspections to ensure continued good operating condition of equipment and promptly repair all deficiencies.

Store all materials indoors or otherwise protected from weather.

For outdoor painting operations, minimize overspray, and use tarps/vacuums/enclosures to contain sandblasting waste and paint chips from paint removal operations.

Petroleum products stored in quantities greater than 500 gallons shall be appropriately labeled and have secondary containment capable of preventing any release to a drainage system or the environment. Use of B-20 is preferred.

Minimize all potential for spills. Specifically, do not allow liquids, including (but not limited to) gasoline, diesel fuel, lubricating oil, or antifreeze, to enter the storm sewer systems, waterways, drainage ditches, or the ground.

Use due caution when operating oil-bearing equipment near aquatic resources. Where necessary, implement appropriate control measures, including but not limited to the use of physical barriers (plastic or tarps, berms, etc.) and/or absorbent materials to prevent leaks or spills from entering waterways.

Maintain a 25-ft minimum buffer zone from streams, be aware of storm drain inlets, and cover or contain debris stored outside.

Flushing empty concrete trucks or dumping excess concrete is prohibited. Transport excess concrete back to the batch plant. The truck chute may be washed at the work site. Flush the truck chute at an on-site location designated by the NSLS-II ES&H Manager. Solidified cement waste from truck chute cleaning is solid waste and shall be cleaned up and transported to the landfill.

Conduct all pipeline sterilization, flushing, hydro-testing, etc. in a manner protective of the environment. The NSLS-II ES&H Manager will designate the approved discharge location(s).

Water used to sterilize or flush pipelines should not be released uncontrollably to the environment, due to a possible high concentration of chlorine. The NSLS-II ES&H Manager will determine the appropriate means of waste disposal.

Stormwater that has accumulated in excavated areas, chlorinated rinse water, and chlorinated water used to sterilize/flush pipelines shall not be directly discharged or otherwise allowed to enter the storm systems, waterways, or drainage ditches without written approval from the NSLS-II ES&H Manager.

8.2 Erosion Prevention and Sediment Control

Manage excavated soil and spoil material in a manner protective of the environment. Cover stockpiled material to prevent erosion and/or install appropriate sediment controls. Use due caution during excavation or any other soil management in the vicinity of sanitary or storm systems, waterways, or drainage ditches.

All erosion prevention measures and sediment controls (silt fence, straw bales, catch basins, etc.) shall be in place and approved by the NSLS-II ES&H Manager prior to beginning land clearing, excavations,

road building, etc. Sediment barriers such as silt fence and straw bales shall be entrenched and of sturdy construction.

The GC shall inspect erosion and sediment controls on a weekly schedule, prior to expected storm events, and after each heavy rainfall event. Document each inspection. Damaged control measures shall be attended to within eight hours of the time of discovery.

Where appropriate, provide temporary or permanent modifications to surface terrain gradient (soil or crushed stone berms, sediment retention basins, etc.) in order to minimize the flow of stormwater into or out of excavated or otherwise disturbed areas.

All erosion and sediment control measures shall be maintained throughout the course of the project and removed at the completion of the project, and appropriate measures shall be taken to return the area to its previous state. Maintenance shall include but not be limited to removal of accumulated sediment, repairs, and/or replacement of storm-damaged or otherwise deteriorated structures.

All disturbed areas shall be stabilized as soon as practicable by appropriate means, including but not limited to the use of mulch or other temporary cover, seeding with native vegetative ground cover, etc.

8.3 Spill Prevention and Control

Report all spills promptly to the BSA Emergency Services Division at extension 2222 or 911 from a BSA phone, or 631-344-2222 from a cell phone, and then to the NSLS-II ES&H Manager. The NSLS-II ES&H manager will notify the Environmental and Waste Management Services Division, who will notify the appropriate regulatory agency.

All spills of petroleum-based materials to soil or water, regardless of quantity, must be reported to the New York State Department of Environmental Conservation. Notifications must therefore be made immediately upon spill discovery.

The responsible contractor will perform or pay for proper cleanup of accidental releases of materials. Cleanup is to be done by properly trained personnel meeting the requirements of 29 CFR 1926.65(q)(6). All waste from the cleanup must be packaged, transported, and disposed of by a licensed entity. The NSLS-II ES&H Manager must be given a copy of the hauler's manifest.

Depending on the materials spilled, the NSLS-II ES&H Manager may require the responsible contractor to hire a certified laboratory to take an appropriate number of soil samples to test at their laboratory. A copy of the results is to be given to the NSLS-II ES&H Manager.

For inside work, provide a spill kit, prevent spills to floor drains and do not discharge waste into any BNL system without approval.

For outside work, provide a spill kit, inspect equipment for leaks, and repair leaking equipment in a timely manner.

During extended periods (e.g., overnight) of non-use, construction equipment should be located over impermeable surfaces to minimize release to soils. If an impermeable surface is not readily available, the equipment should be underlain by a geomembrane or plastic tarp.

8.4 Waste Management

This project is applying for Leadership in Energy and Environmental Design (LEED) certification. To this end:

- The GC shall provide containers and/or transport vehicles for excess property for salvage, universal waste, sanitary/industrial waste, and construction/demolition debris.
- Waste Minimization principles shall be incorporated in all activities to ensure the greatest environmental benefits and minimize future liability for the waste that is generated.
- All work shall be performed in a manner that maximizes salvage. Recycling and waste disposal to landfills shall be minimized.

- Characterization methods and procedures shall be employed by all parties to the contract to ensure that the characteristics of the waste are known and adequately recorded during all stages of the waste management process.
- The GC is responsible for properly handling and disposing of all wastes generated.

APPENDIX A
OFFENSES REQUIRING DISCIPLINARY ACTION

This page intentionally blank.

OFFENSE	FIRST	SECOND	THIRD
<p>Class I</p> <ul style="list-style-type: none"> • Creating or contributing to unsanitary conditions due to poor housekeeping • Posting or removing notices on bulletin boards without permission • Eating in unauthorized areas • Failure to report the use of prescription drugs • Unauthorized soliciting of contributions on NSLS-II Project • Smoking in unauthorized areas (Note: This may be upgraded to a Class V offense if in a hazardous area) <p>For Fourth Offense, next step in Progressive Disciplinary Policy is 30-day suspension, followed by Access Denial for the Fifth Offense within a 365-day time period.</p>	Verbal reprimand	Written reprimand	3-day suspension
<p>Class II</p> <ul style="list-style-type: none"> • Unauthorized use of equipment, tools, or machinery • Failure to observe traffic and parking rules on NSLS-II project • Horseplay <p>For Fourth Offense within a 365-day time period, next step is Access Denial.</p>	Written reprimand	3-day suspension	30-day suspension
<p>Class III</p> <ul style="list-style-type: none"> • Gambling on NSLS-II site • Disregard for safety rules (other than those mentioned elsewhere) • Failure to report an injury or accident 	3-day suspension	30-day suspension	Access denied to site
<p>Class IV</p> <ul style="list-style-type: none"> • Threatening or intimidating other employees or supervisors 	30-day suspension	Access denied to site	
<p>Class V</p> <ul style="list-style-type: none"> • Any violation of safety procedures that contribute to the potential for loss of life or limb (see Note 1 for examples) • Possession of weapons or firearms on company property, including site parking areas • Possession of drugs, alcohol, and related paraphernalia on company property, including site parking areas • Any other violations of the Drug Free Work Place policy • Theft of property from company, client or other employees • Assault on a supervisor or other employee 	Access denied to site		
<p>Note 1: Examples of Safety Violations</p> <ul style="list-style-type: none"> • Failure to comply with Company 100% fall protection policy • Violation of confined space entry procedures 			

NOTE: This policy is designed to set minimum standards and is not meant to supersede a subcontractor's policy or policies which may be more stringent.

Progressive Discipline Policy

Acknowledgement:

I have read and understand the Project policy on discipline. I further understand that not following the company or client's rules and regulations will result in disciplinary action up to and including denial of Project site access.

Print Name _____

Signature _____

Date _____

Witness _____

Date _____

This page intentionally blank.

APPENDIX B
CONTRACTOR INSPECTION FORM

This page intentionally blank.



Plant Engineering Inspection Form for Contractor Equipment

The BNL inspection of this equipment is solely for the purpose of allowing the equipment on the BNL site. The operators of the equipment are responsible to maintain and operate the equipment in a safe manner and in accordance with the equipment operator's manual and the appropriate OSHA standard.

General Contractor: CEIR #:

Sub-Contractor: BNL Contact:

Job #: Site Location: Equipment:

Hour Meter: S. N.: 48 Hour Notice Given:

Item	Item
General Appearance	Carrier:
Cab <input type="text"/>	Outriggers <input type="text"/>
Fire Extinguisher <input type="text"/>	Boom Type <input type="text"/>
Glass <input type="text"/>	Anti-Two Block Device <input type="text"/>
Operator's Manual <input type="text"/>	Hook Latch <input type="text"/>
Load Charts/Capacity Plates <input type="text"/>	Wire Rope <input type="text"/>
Inspection Records <input type="text"/>	Tires/Tracks <input type="text"/>
Operating Condition:	Rigging Equipment:
Operating Controls <input type="text"/>	BTH Lifting Devices <input type="text"/>
Cooling System <input type="text"/>	Chain Hoists <input type="text"/>
Oil Leaks <input type="text"/>	Slings <input type="text"/>
Engine Instruments <input type="text"/>	Shackles <input type="text"/>
All Guards in Place <input type="text"/>	Certification:
Back-Up Alarm <input type="text"/>	Operators License <input type="text"/>
Lights <input type="text"/>	Training Records <input type="text"/>
Mirrors <input type="text"/>	Other <input type="text"/>
Seat Belts <input type="text"/>	
Hoses <input type="text"/>	

*NDF = No Defects Found *SR = Service Required N/A = Not Applicable

Comments:

Inspected By:

cc: Project Engineer

Contractor Safety Rep.

BNL Contact

F&O ESHT&Q File

Date:

This page intentionally blank.

APPENDIX C
INCIDENT INVESTIGATION REPORT

This page intentionally blank.

Instructions for Completing the Line Organization Accident/Incident Investigation Report Form

The following provides guidance for completing the Line Organization Accident/Incident Investigation Report form. This form is intended to provide a means of collecting data for all types of events occurring at BNL from illness and injury to property and vehicle damage to include those involving non-employees, such as visitors, contractors, etc.. It is divided into two parts. The first part is mandatory and the second part is intended for use by those interested in carrying the investigation through to the event's root causes, ameliorating the condition and providing for other information. If the section is not applicable, draw a line through it or check the box if provided.

Part 1: This part must be completed for all investigations

Part 1, Page 3: Case Number: Leave this number blank, it will be filled in by personnel responsible for OSHA Recordkeeping.

Section A: This is to identify individuals involved in the event, their occupation, line organization and supervisors. Space is provided for more than one individual. The first named individual is the victim, or subject about whom this investigation is proceeding. If this is an incident involving more than one victim, please provide a completed investigation for each. If others identified are witnesses, please indicate that by placing a "W" next to the name.

Name: The first name listed should be that of the injured/ill individual. Please do not use nicknames.

Occupation: If you know the person's official job title, please use same.

Hospital: If the individual was transported to a hospital, please indicate which one.

Life #: Please use Life Numbers for employees. If not a badged employee, use Social Security number

Telephone #: Extension at BNL through which the employee is reachable if the need arises.

Line Organization: If a BSA employee, use the Lab organization (Department or Division). If it is a contractor, use the contractor's employer.

Supervisor: Please provide the name of the immediate BSA supervisor, or contractor's supervisor.

Section B: Please indicate by a check mark in front of the classification listed that which applies. If none apply then use other. If you don't know, leave it blank.

Section C: Please indicate the date and time of the event on the first line. The date the employee notified the BSA Line organization, or non BSA employee notified his/her organization follows on the next line. Please be as specific as possible about where the event occurred. Please place check marks as appropriate in the rest of this section. NOTE: Type C Investigation is for recordable injuries and requires completion of all applicable sections of the report.

Section D: This section is only pertaining to non-BSA personnel.

Section E: Place check marks in the box in front of each item relating to this for injury/illness only. If you do not know the answer, contact Safety Engineering or your ESH Coordinator. (This section is similar to the front page of the CAIRS report.)

Section F: This section applies only to non-illness/injury events and is intended for use in reporting DOE property/DOE vehicle damage for the DOE CAIRS reporting process, and/or losses from radiological or environmental events.

Section G: Indicate who notified Line Management of this injury, including date and time, and who was notified.

Part 1, Page 4: REQUIRED INVESTIGATION INFORMATION

Section H: Indicate what the person was doing at the time of the event, the purpose of the work, what equipment was used and where it was being done. Indicate also how often the task is performed and how often this individual performs the task.

Section I: Just check yes or no.

Section J: Tell what happened, how it happened and the severity of the injury or damage if known.

Section K: Request the diagnosis from OMC staff and enter it here.

Section L: Has been changed to section M. The new Section L is to identify the body part injured.

Section M: The old section M has been moved to Part 2, G. If the source of the diagnosis is a non-BSA practitioner, indicate the name here...also if you know that medical treatment beyond first aid is being provided, list the treating practitioner here. You must provide the name of the hospital only if the employee is admitted overnight.

Section N: Signature block at the end of Part 1 is for first aid cases or for near misses only. If the case meets the criteria for recordability, skip this section and move on to Part 2.

Part 2, Page 5: REQUIRED FOR ALL CASES MEETING THE CRITERIA FOR RECORDABILITY Complete only those sections which apply. You may draw a line through those sections which do not apply.

Section A: Place a check mark in the box provided in front of those surfaces and conditions that apply.

Section B: Complete this section only if the event was outdoors or if weather somehow contributed to the event causality.

Section C: If this event involved tools, machines or equipment, place a check mark in the space provided in front of the item and then identify the tool, machine or equipment (e.g., [x] Non-powered Hand Tool ...hammer). If machines or other equipment are involved, indicate if they are part of a Preventive Maintenance Program and if Lockout/Tagout was applicable.

Section D: This box addresses miscellaneous items that are usually peripheral to accidents, incidents and injuries, but may have some contributing impact to the event. Please check only those items that apply.

Section E: This section only applies to events that involved the use of a vehicle. Please check only those events that apply.

Section F: Completion of this section is required for all Type C Investigations. Please place a mark in those boxes that identify those hazards that apply.

Section G: Completion of this section is required for all Type C Investigations. There may be no right or wrong answer here. It may be necessary for you to seek assistance from your ESH Coordinator, or the Safety Engineering Group to complete this portion. If you are unable to determine the causality, use the comment section in the box to relay that information...or you may wish to use that space to provide some clarification of your choices. "n.o.c." means not otherwise classified. If this is a recordable case, you must provide corrective actions to address and eliminate, if possible the direct cause of the accident... If the root cause is identified, the actions recommended should reflect plans to minimize and omit it. If the risk is acceptable otherwise, indicate "Not Applicable." When providing corrective actions, you must indicate who will be responsible and when it will be completed. If you need to investigate the incident further by talking with witnesses, please fill in the information requested.

Section H: In the course of your investigation of any case involving those items listed, the OMC has probably already referred the case, but you should follow-up by contacting the Industrial Hygiene Group for assistance and/or confirmation that a condition exists and get IH recommendations to ameliorate the issues if possible.

Section I: Completion of this section is required only if there is restricted work and/or days are lost away from work. If there is no associated lost time (Restricted Workdays or Days Away From Work) beyond the initial date of injury/illness, do not fill in this section.

Section J: This section is intended for those cases that need special attention. Please answer accordingly and refer to those SBMS areas indicated.

Section K: Completion of this section is required for all Type C Investigations.

Section L: This section is provided for the Line Organization's Comments. Completion is not required for these investigations. It merely provides space for comments and room for the Line to review the reports for completion prior to sending same to Safety Engineering for input into internal database (OSMIS) or submittal to CAIRS.

Section M: This section is reserved for Safety Engineering Use only.

Completed Investigations must be signed and forwarded to the NSLS-II ES&H Manager

Line Organization Accident/Incident Investigation Report BROOKHAVEN NATIONAL LABORATORY

A. Who was involved in this accident/incident? (The first name should be the victim/injured/ill person):

Name	Occupation	Hospital, if transported	Life #/ID	Telephone # at workplace	Contractor	Supervisor's Name

B. Job Classification

C. When was the Occurrence (as reported by employee/non-employee)? ___/___/___ Time: _____am/pm
 When was the date of notification to BSA NSLS-II Project Staff ___/___/___ How? _____
 Where did this event happen? _____

Type of Accident/Incident: Injury/Illness Property Vehicle Radiological Environmental Near Miss
BSA Investigation Type: Type C First Aid Near Miss MVA Contamination Fire Other

D. If victim or injured/ill person is not a BSA employee, please indicate identity of employer here. Not Applicable

E. OSHA Information (Injury/Illness)

Death? _____ Yes No
 Injury Does this case involve days away from work? Yes No
 Skin disease or disorder Are there multiple victims? Yes No
 Respiratory conditions Was the employee hospitalized overnight? Yes No
 Poisoning Was there an on-the-job transfer or restriction? Yes No
 Has the employee returned to full duty? Yes No
 All other illnesses If applicable, has employee brought BTW slip from nurse? Yes No
 Experience on this task: under 3 months 3-12 months over 12 months

F. Property Loss Type Not Applicable
 (For property/vehicle and/or radiological or environmental losses only; otherwise, mark NA and skip this section.)

Fire/Smoke: Building Equipment Brush Vehicle Other
Electrical: Equip. Contact Wiring Overload Insulation Polarity Grounding Other
Explosion: Vapor Chemical Fluids Dust
Mechanical: Linear energy Rotational energy Pressure Falls Mech. breakdown Overload
Act of Nature: Wind Rain/Hail Freezing rain Snow Lightning Earthquake Other
Leaks, spills, releases, or contamination: Chemical Biological Nuclear/Radiological
 Environmental Impairment/Impact Poisoning Other
Miscellaneous: Thermal Damage Corrosion Water Damage Sabotage Other

F. Property Loss Type (cont.)
Vehicle Loss Type: Government-owned Contractor-owned Personal/Private-owned Other

L. Body Part (s) Injured:

(Indicate whether it is left or right, if applicable): N/A Unknown

- | | | | |
|---|---|---|-----------------------------------|
| <input type="checkbox"/> Abdomen | <input type="checkbox"/> Face | <input type="checkbox"/> Lip | <input type="checkbox"/> Shoulder |
| <input type="checkbox"/> Ankle | <input type="checkbox"/> Finger | <input type="checkbox"/> Lung | <input type="checkbox"/> Skull |
| <input type="checkbox"/> Arm | <input type="checkbox"/> Foot | <input type="checkbox"/> Lungs | <input type="checkbox"/> Testicle |
| <input type="checkbox"/> Back | <input type="checkbox"/> Groin | <input type="checkbox"/> Mouth | <input type="checkbox"/> Thigh |
| <input type="checkbox"/> Brain | <input type="checkbox"/> Hand | <input type="checkbox"/> Multiple Parts | <input type="checkbox"/> Throat |
| <input type="checkbox"/> Buttock | <input type="checkbox"/> Head | <input type="checkbox"/> Musculoskeletal system | <input type="checkbox"/> Thumb |
| <input type="checkbox"/> Cardiopulmonary | <input type="checkbox"/> Heart | <input type="checkbox"/> Nervous system | <input type="checkbox"/> Toe |
| <input type="checkbox"/> Chest | <input type="checkbox"/> Hips | <input type="checkbox"/> Nose | <input type="checkbox"/> Tooth |
| <input type="checkbox"/> Digestive System | <input type="checkbox"/> Jaw | <input type="checkbox"/> Other | <input type="checkbox"/> Torso |
| <input type="checkbox"/> Ear | <input type="checkbox"/> Kidney, Bladder, Intestine | <input type="checkbox"/> Pulmonary system | <input type="checkbox"/> Wrist |
| <input type="checkbox"/> Elbow | <input type="checkbox"/> Knee | <input type="checkbox"/> Respiratory system | |
| <input type="checkbox"/> Eye | <input type="checkbox"/> Leg | <input type="checkbox"/> Scalp | |

M. Name of outside (non-BSA) medical provider, if applicable Not Applicable

Hospital (only if admitted overnight — not ER) _____

N. NOTE: If this is a recordable case, mark NA and proceed to Part 2. NA (Not Applicable)

If this is a First Aid case, complete the signature block below. Part 2 is optional for first aid cases.

Investigated by: _____ Date: _____

Employee Signature: _____ Date: _____

Contractor Project Superintendent Signature: _____ Date: _____

NSLS-II ESH Manager or other Designated Safety Person: _____ Date: _____

End of Part 1

PART 2: (The following is required for all investigations of cases meeting the OSHA general recordkeeping criteria for recordable cases. Please complete only those sections that apply. **This part is optional for First Aid cases and Near Misses.**)

A. Walking and Working Surfaces

Not Applicable

<input type="checkbox"/> Dry	<input type="checkbox"/> Wet	<input type="checkbox"/> Slippery	<input type="checkbox"/> Not Specified
<input type="checkbox"/> Grass/Soil	<input type="checkbox"/> Tile, Concrete or Wood Floor	<input type="checkbox"/> Stairs	<input type="checkbox"/> Ladder
<input type="checkbox"/> Ramp	<input type="checkbox"/> Pavement/Sidewalk	<input type="checkbox"/> Parking Lot	<input type="checkbox"/> Platform
<input type="checkbox"/> Other Elevated Surface	<input type="checkbox"/> Confined Space	<input type="checkbox"/> Roadway/Street	<input type="checkbox"/> Not Specified
<input type="checkbox"/> Not Applicable	<input type="checkbox"/> Other , Specify:		

B. Outdoor and Weather-related: If this was an **outdoor activity, or if weather related** to the incident in any way, please complete the following by checking all that apply: Not Applicable

<input type="checkbox"/> Snow/Sleet-related	<input type="checkbox"/> Rain/Water-related	<input type="checkbox"/> Wind/Hurricane-related	<input type="checkbox"/> Ice related
<input type="checkbox"/> Response-related	<input type="checkbox"/> Athletic/Recreational	<input type="checkbox"/> Extreme Hot/Cold-related	

C. Tool, Machine or Equipment-related, please check those that apply, or Other:

Not Applicable

Fixed Machinery, please identify: _____

Non-powered Hand Tool, please identify: _____

Portable Electric Tool, please identify: _____

Portable Compressed Air-driven Tool, please identify: _____

Laboratory Equipment, please identify: _____

Office Equipment, please identify: _____

Maintenance Equipment, please identify: _____

Other, please identify: _____

Is equipment on a **Preventive Maintenance (PM)** schedule? Yes No If so, date of last PM _____

Was **Lockout/Tagout** applicable? Yes No

Was employee authorized for this procedure? Yes No

D. Miscellaneous Please check those that apply:

Not Applicable

Was a **Job Risk Assessment or Hazard Analysis** performed for this job? Yes No

If no, is one scheduled? Yes No When? _____

Was this employee involved in the **work planning**? Yes No

Was this job considered "**skill of the craft**"? Yes No Why or why not?

What **feedback** has the employee been given about this job?

D. Miscellaneous (cont.)

What **Personal Protective Equipment** was provided for this job?

If Personal Protective Equipment was required for this job, was it worn? Yes No

Was it worn properly? NA Yes No

Was a special **permit (hot work, confined space, radiological, etc.)** required for this job? Yes No

Why? _____

Is all of this person's **applicable training** current for this job? Yes No

E. If Vehicle(s) were involved, please complete the following by checking the applicable items Not Applicable

Rented Vehicle, Type: _____

Personally-owned vehicle, Type: _____

Government-owned vehicle Type: _____

Construction Equipment Type: _____

Was vehicle equipped with a seat belt? Yes No

Was it used at the time of the incident? Yes No

F. Hazards Identified as part of this event: (Required for Type C Investigations.) Not Applicable

Integrated Safety Management Hazard Recognized _____

Manual Material Handling, less than 20 lbs Flying particles

Manual Material Handling, more than 20 lbs Point of Operation

Keyboarding, data entry or manipulation In-going Nip Points

Risk of Possible Biological exposure Poor/Inadequate/No Lighting

Risk of Possible Chemical exposure Possible Noise exposure

Risk of Possible Radiological exposure Rotating Part(s)/Rotating Blade(s)

Workstation Design/other Ergonomic issues Traffic-Related Problem

Unacceptable Behavior Sharp edges

Unprotected low hanging surfaces Other (Please Specify) _____

G. Accident Causes (REQUIRED) Indicate your choice of the Direct [or immediate cause] by placing a “D” in front of that item on the list. Do the same for Contributing (“C”) and Root (“R”) causes. There may be more than one of each. If you do not know, or do not wish to go through this exercise, pass it up the Line. **NOTE:** This section must be completed by the Line Organization and should be used to help determine corrective actions. The report will be reviewed by Safety Engineering and incomplete reports will be returned prior to submittal of CAIRS Reports to DOE.

- Equipment/material problem, n.o.c. Personal error Error in equipment or material selection
- Defective or failed part Inadequate work environment Drawing, spec or data errors
- Defective or failed material Inattention to detail/surroundings Training issues, n.o.c.
- Defective weld, brazed, or soldered joint Other human factors error (identify) _____
- Inadequate supervisor or admin. control Error by manufacturer, or in shipping Design problem, n.o.c
- Work org. & planning deficiency Procedure problem, n.o.c. Inadequate surface preparation
- Noise, electrical, instrument, machine Verbal communication problem Management problem, n.o.c.
- Contamination Violation of requirement/procedure Inadequate barriers
- Defective or inadequate procedure Inadequate or defective design Lack of procedure
- Fire/Explosion/vandalism/weather Inadequate man/machine interface_ Theft/sabotage/power failure
- External phenomena, n.o.c. Other (“not otherwise classified” --n.o.c.) _____

Comments on Causality (not required, but may be used for clarity):

Corrective Actions: (Should address any causes identified (see above). If a first aid case and risk is acceptable, corrective actions may not be necessary. If so, indicate “Not Applicable”. However, if this is a recordable case, corrective actions are required.) [] Not Applicable

1. Immediate actions to mitigate direct cause of accident/incident:

2. Actions recommended to mitigate contributing and root causes:

3. If a corrective action was required, who is responsible for its completion?

4. When will it be completed?

5. If followup is/was needed) Names of witnesses/others to be interviewed: [] Not Applicable

H. Cases needing referral to, or follow up by, Industrial Hygiene: Note: If there is a report that any of those conditions asterisked (*) below occur, you must contact the Industrial Hygiene Group of the Safety & Health Services Division for help in further evaluation and/or ameliorization of the problem. EACH of these may be OSHA Recordable incidents and a more complete investigation may be necessary.

- If this is an occupational illness or chronic condition, please check those that apply. [] Not Applicable
- [] Allergic reaction to bites or stings
 - [] Chemical Sensitization *
 - [] Contact Dermatitis or other skin disease or disorder
 - [] Pleural Plaques, Asbestosis, Silicosis, breathing hazardous biological agents, Berylliosis or other dust, gas, vapor, or fumes resulting in toxic inhalation and other diseases of the lungs *
 - [] Tuberculosis infection (positive skin reaction or medical professional's diagnosis following exposure) *
 - [] Poisoning evidenced by abnormal concentrations of toxic substances in the blood (such as lead, cadmium, mercury, other metals, carbon monoxide, benzene, insecticide sprays, formaldehyde) *
 - [] Needle stick or injury from a sharp object that may be contaminated with blood or other potentially infectious material *
 - [] Cancer, or other chronic irreversible disease *
 - [] Case requiring an employee to be removed from work under the requirements of an OSHA health standard *
 - [] Effects of environmental heat (heat stress, sunstroke) *
 - [] Effects of exposures to low temperatures (frostbite) *
 - [] Effects of non-ionizing radiation (welding flash, lasers) *
 - [] Exposure to anthrax, bloodborne pathogens (AIDS, HIV, hepatitis B or C, etc.) *
 - [] Muscular-skeletal Disorders (MSDs) resulting from cumulative trauma (white finger syndrome, certain losses of function) or repetitive motion (carpal tunnel syndrome) in conjunction with general recording criteria. *
 - [] Standard Threshold Shift of >25 decibels on the A scale in the 2000-4000 Hertz Range in either ear from established baseline *
 - [] Other (Please explain):

I Lost Workday Information [] Not Applicable
[] Information not yet available

Days Away From Work:

First Full Day Missed: (MM/DD/YY) _____ [] Did not return to work on the next day

[] Returned to work, anticipate no further lost time

Return to Work Day: (MM/DD/YY) _____ [] Sent Home Sick on day of event

Restricted Workdays:

First Full Day Assigned: (MM/DD/YY) _____

Day returned to Full Duty: (MM/DD/YY) _____

[] Information does not apply

Was a Return-to-Work Plan developed for this incident? [] Yes [] No [] Information not yet available

Describe Restrictions:

J. Is Special Attention Needed? Not Applicable

Is this an ORPS event? Yes No

HAVE YOU CONTACTED THE ORPS CATEGORIZER (631-433-0443)? Yes No

Has a separate BSA or DOE **investigation Board or committee** been assigned/charged? Yes No

Has this report been forwarded to the organization's **Lessons Learned Coordinator**? Yes No
 If yes, when? _____

Has the organization's **ESH Coordinator** been notified? Yes No

If this involves another organization, has a copy been provided to that organization? Yes No
 Please note other organization and the date they were notified:
 _____ Date: _____

K. TYPE C INVESTIGATION SIGNATURE BLOCK

Report Prepared by: _____ Date: _____

Employee Signature: _____ Date: _____

Contractor Project Superintendent Signature: _____ Date: _____

NSLS-II ESH Manager or other Designated Safety Person: _____ Date: _____

L. Reviewer's/Manager's Notes:

M. Comments by Safety Engineering

Forward for CAIRS Report__ Yes No

Reject and return to Line Manager_____ Workers' Compensation Claim filed? Yes No

Reasons for rejection_____

This page intentionally blank.

APPENDIX D
INSPECTION CHECKLIST

This page intentionally blank.



CONSTRUCTION SAFETY INSPECTION CHECKLIST

Date Inspection Conducted: _____ Location: _____
 BSA Contact Person/Project Engineer: _____
 Prime Contractor: _____ Job #, Task Order # _____ Contact # _____
 Name(s) of person(s) participating in this inspection: _____
 Indicate either: S=Satisfactory/Yes U=Unsatisfactory/No N/A=Not Applicable
 NOTE: A check in the box to the right of the heading indicates the entire category was satisfactory.

8.0 PERSONAL PROTECTIVE EQUIPMENT	9.0 HAZ COM
Safety glasses and/or goggles available & being used? [1926.102]	MSDS openly available to all employees? [1910.1200(g)]
Face shield available for bulk liquid tasks? Grinding? [1926.102]	Flammable liquids are in approved safety cans? [1926.152(a)(1)]
Hand protection used/worn as required? [1926.951]	Flammable liquids storage containers labeled properly? [1910.1200(f)(5)]
Foot protection worn as required? [1926.96]	All hazardous containers labeled appropriately? [1910.1200(f)(5)]
Hearing protection worn where required? [1926.101]	Supplies on hand for accidental chemical spills?
Hard hats worn on construction site at BNL? [1926.100]	10.0 LADDER/STAIR SAFETY
Respirators if required? Type? [1926.134]	Ladders are safe and inspected as appropriate? [1926.1053(b)(15)]
Fall protection, full body harness & lanyard used at > 6 ft? [1926.104]	Stair rails - for 30" change in elevation or 4 risers? [1926.1052(c)(1)]
11.0 ELECTRICAL SAFETY	Stairs or ladder provided for access points > 19" high? [1926.1051(f)]
GFCI's used for all portable electrical hand tools? [1926.404]	Extension & straight ladders extend 3' beyond landing? [1926.1053(b)(4)]
Electrical panels are labeled appropriately? [1910.303(f)]	Stepladders are only used in open position? [1926.1053(b)(4)]
Light bulbs for illumination protected from breakage? [1919.303(g)(2)(i)]	12.0 CONFINED SPACE
LO/TO is being used for appropriate tasks? [1910.147]	Confined space entry work? Posted? [1910.146(c)]
Strain relief integrity for cords and plugs intact? [1926.405(g)(2)]	Permit for 2C spaces? [1910.146(e)]
For extension cords: hard usage cord includes three-wire cords marked SO, STO, SJ, SJO, SJT, or SJTO [1926.405(5)(a)(2)]	Fire/Rescue notified for 2C permitted spaces? [1910.146(k)]
Electrical cords inspected & have all prongs intact? [1926.404(f)(8)]	Air monitoring? [1910.146 App B]
Portable generators are grounded per NEC requirements? [1926.404(f)(9)]	Training in place? [1910.146(g)]
Electrical power tools are double insulated or grounded? [1926.302(a)]	13.0 MATERIAL HANDLING
14.0 COMPRESSED GASSES	Employees operating PITs are trained on the equipment? [1910.179(b)(5)]
Compressed gas cylinders stored secured & upright? [1926.350(a)]	Wire rope used for lifting? Deterioration is absent? [1926.552(a)(3)]
Oxygen/acetylene torch units have flash back arrestors? [1926.350(g)]	Web slings used for lifting? Deterioration is absent? [1910.184(i)(9)]
Compressed gas cylinders not in use have caps in place? [1926.350(a)]	Crane used? Approved written plan on file w/ load capacities? [1910.179(b)(5)]
15.0 EXCAVATION	Hooks used for lifting have safety latch in place? [1910.181(j)(2)]
Excavation-ladders if > 4ft deep? Extend 3 ft? 50 ft apart? [1926.651(c)(1)]	16.0 EMERGENCY/FIRST AID
Excavation – protection from cave-ins for > 5 ft? [1926.652(a)]	Emergency phone numbers posted and known by all? [1926.35]
Sloping, shoring evaluated? [1926.6562(f)]	Emergency eyewash and/or shower units accessible?
Daily inspection? [1926.651(k)]	First aid kit available at work site? [1926.50(d)(1)]
17.0 HAND TOOLS/POWER TOOLS	Fire extinguishers readily available (not blocked)? [1929.150(c)(1)]
Grinders (portable & stationary) have guards in place? [1926.300(b)]	Fire extinguishers inspected? [1926.150(a)(4)]

Impact style air tools have safety clips/retainers installed? [1926.302(b)]	18.0 HOT WORK/BURNING PERMITS USED FOR GRINDING, CUTTING, WELDING
Pneumatic power tools have hoses secured? [1926.302(b)(1)]	
Portable circular saws equipped with protective guards? [1926.304(d)]	19.0 GENERAL SAFETY
Unsafe hand tools are prohibited? [1926.301(a)]	
Impact tools, hammers kept free of splinters/mushrooms? [1926.301(c)]	Exits marked? Not blocked? [1926.34]
20.0 OTHER	General housekeeping is neat and orderly? [1926.25]
	Wall openings & floor holes are covered or guarded? [1910.23(a)&
	Rebar caps used for protruding bars? [1926.701(b)]
	Concrete work? Silica dust training documented for all? Respirator [1910.134]
	Scaffolding-guardrails used? [1926.451(g)]
	Competent person on site? [1926.451(f)]
	Scaffold design by qualified person? [1926.451(a)(6)]
	Monitoring of personnel and/or atmosphere as required [1910.100
	Illumination adequate? [1926.56]

CORRECTIVE ACTION PLAN

For all items marked as "U," list the item, person responsible, and expected completion date.

ACTION ITEM	DATE VERIFIED*	Verified by**

OTHER OBSERVATIONS NOT RECORDED ABOVE

OBSERVABLE ITEM	REF.	PERSON RESPONSIBLE	DATE DUE	DATE VERIFIED*	Verified by**

* Date Observation/Corrective Action was verified as completed.

** Initials of the individual verifying the Observation/Corrective Action was verified as completed.

Reference columns should contain the OSHA regulation, SBMS Subject Area or other standard or regulation being cited.

NO VIOLATIONS NOTED DURING THIS INSPECTION

Signature of Inspector: _____

Signature of Contractor rep. (for a report with any unsat item) _____

Cc: GC Project Superintendent
BSA Construction Safety Engineer

This page intentionally blank.

APPENDIX E
PHA WORKSHEET/GUIDELINES

This page intentionally blank.

PHASE HAZARD ANALYSIS (PHA)**STEP 1.**

Identify jobs posing the greatest accident risk.

STEP 2.

Prioritize selected jobs into four (4) main areas.

1. Jobs with high accident frequency
2. Jobs with lower frequency but higher severity
3. Jobs with serious injury potential
4. New jobs with no accident history

STEP 3.

Conduct job analysis

1. Use either the direct observation method or the discussion method.
2. For best results observe and discuss job using an experienced employee in that job.

STEP 4.

You need an understanding of the types of accidents possible in your workplace and you must review the records of the past accidents.

There are six (6) categories of accidents:

1. Struck (By or against)
2. Contact (abrasion, electric shock, etc.)
3. Caught (in, on, between, under)
4. Fall (from elevation or same level)
5. Over exertion (stress or strain)
6. Exposure (exposed to gases, fumes, mists, etc.)

STEP 5.

Develop recommended safe work procedures. Use complete JSA to conduct initial training of new employees, or to review safe procedures with existing employees. JSA are also useful for accident investigation as a resource.

Below is an example of a section of a Phase Hazard Analysis.

TASK	ACTIVITY	HAZARDS	MITIGATION REDUCTION	COMMENTS
<i>Concrete Canal Removal</i>				
	Concrete demolition	Eye injury from flying debris; Impact injury	Ensure the demolition area is clear of all unnecessary personnel; Wear proper eye protection and PPE; Install safety screens over top and front glass of heavy machines with concrete demolition attachment; Use of other demolition methods, such as non-explosive expansive agents (DEXPAN)	
		Silica dust inhalation	Use engineering controls and containment methods such as wetting of concrete; When sawing concrete, use saws that provide water to the blade; Wear disposable or washable protective clothes at the worksite; Shower (if possible) and change into clean clothes before leaving worksite to prevent contamination of vehicles, homes, and other work areas; Conduct air monitoring to measure worker exposures and ensure that controls are providing adequate protection for workers; Use adequate respiratory protection when source controls cannot keep silica exposures below the TLV; Provide workers with training that includes information about health effects, work practices, and protective equipment for respirable crystalline silica	

TASK	ACTIVITY	HAZARDS	MITIGATION REDUCTION	COMMENTS
<i>Concrete Canal Removal</i>				
	Concrete demolition	Man/machine impact resulting in personnel injury	Use high visibility vests; Only qualified Equipment Operators and Riggers shall be directly involved in work activities ; Keep non-essential personnel away from work activities; Keep personnel from under loads; Inspect swing arc prior to beginning work to ensure workers will not have a need to impinge on the operational radius of the machine. Heavy equipment shall be outfitted with operational back-up alarms; Pull long hair back and do not wear loose clothing that can get caught in machinery; Remove any jewelry that can interfere with safe machinery operation	
		Hearing impairment	Hearing protection will be worn during evolutions where noise levels exceed 85 decibels; Use silencers on jack hammers; Use compressors insulated against noise; Organize and design work practices to minimize the number of people exposed and the noise levels to which they are exposed to	
	Material transfer	Load drops (personal injury, equipment damage)	Inspect all below hook lifting devices and crane; Use only approved and documented lifting designs; Use only qualified crane operation and riggers to make lifts; Keep personnel away from loads; Keep non-essential personal out of work area; Verify weight of load before lift; use crane load cell	
		Spread of contamination, personnel contamination	Read and follow radiological postings in area; follow RCT directions; proper radiological worker practices; Apply fixative, wrap or package prior to removal from area	
		Personal injury resulting from man/machine impact	Use spotters when using crane or excavator; one Person-in-Charge (PIC); inspect crane travel path prior to operating crane	

This page intentionally blank.

**APPENDIX F
CONFINED SPACE PERMIT**

CONFINED SPACE ENTRY PERMIT

GENERAL INFORMATION			CONTROLS/EQUIPMENT (check all that apply)		
Permit Space Location: _____			<input type="checkbox"/> ISOLATION <input type="checkbox"/> LOCKOUT/TAGOUT <input type="checkbox"/> BLANKING/BLINDING <input type="checkbox"/> DOUBLE BLOCK AND BLEED <input type="checkbox"/> LINEBREAKING/MISALIGNMENT <input type="checkbox"/> OTHER		
Purpose of Entry: _____					
Entry Permit Valid for _____	Date: _____ Time: _____	to Date: _____ to Time: _____			
21.0	CONFINED SPACE HAZARDS	22	23.0		
ATMOSPHERIC	YES	NO	<input type="checkbox"/> INERTING <input type="checkbox"/> PURGE/CLEAN <input type="checkbox"/> METHODS FOR SAFE COVER REMOVAL AND SECURING AREA <input type="checkbox"/> ATMOSPHERIC TESTING <input type="checkbox"/> Periodic (give interval) <input type="checkbox"/> Continuous <input type="checkbox"/> VENTILATION <input type="checkbox"/> Natural <input type="checkbox"/> Continuous forced air <input type="checkbox"/> Local exhaust <input type="checkbox"/> ENTRY EQUIPMENT <input type="checkbox"/> Ladders <input type="checkbox"/> Other _____ <input type="checkbox"/> PERSONAL PROTECTIVE EQUIPMENT <input type="checkbox"/> Respiratory <input type="checkbox"/> SAR <input type="checkbox"/> Air Purifying <input type="checkbox"/> Protective Clothing (specify) _____ <input type="checkbox"/> Eye and face protection <input type="checkbox"/> Hearing protection <input type="checkbox"/> RESCUE AND RETRIEVAL EQUIPMENT <input type="checkbox"/> Full Body Harness <input type="checkbox"/> Lifeline <input type="checkbox"/> Tripod w/mechanical winch <input type="checkbox"/> Explosion proof lighting <input type="checkbox"/> NON-SPARKING TOOLS <input type="checkbox"/> INTRINSICALLY SAFE ELECTRICAL EQUIP & GFCI <input type="checkbox"/> COMMUNICATION EQUIPMENT <input type="checkbox"/> Radio <input type="checkbox"/> Phone <input type="checkbox"/> Other <input type="checkbox"/> WORKING ON OR NEAR ENERGIZED EQUIPMENT <input type="checkbox"/> FIRE EXTINGUISHERS		
Oxygen Deficiency	<input type="checkbox"/>	<input type="checkbox"/>			
Oxygen Enrichment	<input type="checkbox"/>	<input type="checkbox"/>			
Explosive (Gas/Vapor)	<input type="checkbox"/>	<input type="checkbox"/>			
Carbon Monoxide	<input type="checkbox"/>	<input type="checkbox"/>			
Hydrogen Sulfide	<input type="checkbox"/>	<input type="checkbox"/>			
Other Toxic Gases/Vapors (e.g. solvents; welding fumes)	<input type="checkbox"/>	<input type="checkbox"/>			
ENGULFMENT		<input type="checkbox"/>			
CONFIGURATION (ENTRAPMENT)	<input type="checkbox"/>	<input type="checkbox"/>			
MECHANICAL	<input type="checkbox"/>	<input type="checkbox"/>			
ELECTRICAL	<input type="checkbox"/>	<input type="checkbox"/>			
SUBSTANCE HAZARDOUS TO SKIN OR EYES	<input type="checkbox"/>	<input type="checkbox"/>			
HEAT STRESS	<input type="checkbox"/>	<input type="checkbox"/>			
OTHER POTENTIAL HAZARDS	<input type="checkbox"/>	<input type="checkbox"/>			
RADIATION	<input type="checkbox"/>	<input type="checkbox"/>			
NOISE	<input type="checkbox"/>	<input type="checkbox"/>			
PERSONNEL					
Entrant(s) _____	Time in _____	Time out _____			
_____	_____	_____			
_____	_____	_____			
Attendant(s) _____					
Entry Supervisors(s) _____					

COMMUNICATION PROCEDURES USED BY ENTRANT(S) & ATTENDANT(S) check all that apply					
<input type="checkbox"/> Visual	<input type="checkbox"/> Rope				
<input type="checkbox"/> Voice	<input type="checkbox"/> Radio				
<input type="checkbox"/> Other (specify) _____					
RESCUE AND EMERGENCY SERVICES			RESCUE PROCEDURES		
_____	_____				
Summoring Procedure: _____					

			Verify Fire Rescue availability before entry is made <input type="checkbox"/> Yes Date _____		

ATMOSPHERIC TESTING RECORD					
TESTING EQUIPMENT USED					
Make/Model:		Serial #		Calibration Date:	
Make/Model:		Serial #		Calibration Date:	
Day of Use Sensor Check <input type="checkbox"/> Yes <input type="checkbox"/> No			Field Check (Bump Test) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Tested By:		BNL No:			
Date & Time	Oxygen % (%O2)	Flammable Gas (% LEL)	Carbon Monoxide (CO ppm)	Hydrogen Sulfide (H2S ppm)	Other:
Pre-Entry					
Acceptable Reading	19.5 – 23.5	< 10 %	25 ppm	10 ppm	
Atmosphere Tester (Tested By):		BNL Life Number:			
ENTRY AUTHORIZATION					
ENTRY AUTHORIZED BY: (Entry Supervisor and NSLS-II ESH Manager (or designee))					
NAME: _____			TIME: _____		
SIGNATURE: _____			DATE: _____		
NAME: _____			TIME: _____		
SIGNATURE: _____			DATE: _____		
<i>POST ENTRY PERMIT AT ENTRANCE TO CONFINED SPACE</i>					
ENTRY CANCELLATION					
ENTRY CANCELLED BY (Entry Supervisor):					
NAME: _____			TIME: _____		
SIGNATURE: _____			DATE: _____		
NOTIFICATION OF CANCELLATION MADE TO FIRE RESCUE		DATE: _____		TIME: _____	
REASON FOR CANCELLATION:					
<input type="checkbox"/> Entry Operation Completed <input type="checkbox"/> Prohibited Condition Arose (Specify) _____ _____ _____					
Personnel's Comments:					
Cancelled Permit Review by:				Date:	
Return Permit to NSLS-II ESH Manager upon Completion					

This page intentionally blank.

APPENDIX G
DIGGING PERMIT

This page intentionally blank.

BROOKHAVEN NATIONAL LABORATORY

NSLS-II Construction Environment, Safety and Health Plan

DIGGING PERMIT NUMBER _____



A: GENERAL INFORMATION

1. Name of Project Manager:	2. Project Manager's Telephone #:	3. Today's Date:
4. Name of Project:	5. Project # / Work Order #:	6. Maximum Proposed Depth of Excavation:
7. Scheduled Excavation Start Date:	8. How has the perimeter of the proposed excavation site been identified in the field? <input type="checkbox"/> by markers <input type="checkbox"/> by white paint <input type="checkbox"/> other (explain):	
9. Description of work to be done:		10. List affected facilities at proposed excavation site
11. Location (attach drawings obtained from Infrastructure Mgmt indicating proposed excavation and the locations of all known utilities):		

B: RADIATION and CHEMICAL Contamination, CERCLA Institutional Controls REVIEW: *required in areas of waste transfer lines ("D-waste"), areas of suspect chemical or radioactive contamination, and buried ordinances (<http://luic.bnl.gov/website/landcontrols>).*

Long Term Response Actions (LTRA) (2828) Non-Potable Water in area Yes <input type="checkbox"/> No <input type="checkbox"/> <i>(if Yes, requires mark out and sign off in Block E)</i>	(if checked "Yes", complete section 'C') CONTAMINATION / RADIATION / CHEMICAL Yes <input type="checkbox"/> No <input type="checkbox"/> 24.0 UNEXPLODED ORDINANCE/BURIED MUNITIONS YES <input type="checkbox"/> NO <input type="checkbox"/>
--	---

Comments :	SIGNATURE:	LIFE #:	DATE:
------------	------------	---------	-------

Environmental & Waste Mgt Services Division (EWMSD) (3091/3148)	ENDANGERED SPECIES HABITAT <input type="checkbox"/>	DATE:
SIGNATURE:	TYPE:	LIFE #:

C:

For Radiation / Chemicals: FS Rep. (8248/484-1728) FS Group (2776)	ACTION TAKEN: Work Permit <input type="checkbox"/> Hand dig only <input type="checkbox"/> Postings <input type="checkbox"/> Other <input type="checkbox"/>	SIGNATURE:	LIFE #:	Date:
For former CERCLA sites: LTRA Rep (2828)	Site Specific LUIC's:	SIGNATURE:	LIFE #	Date:

D: LIMITED UTILITY MARKING: *required for all machine digging in developed areas and for all excavations greater than 6 inches in depth in developed areas.* ON-SITE OFF-SITE For Off-site call 1-800-272-4480 for Mark Out. Confirmation # _____ and Mark Out completion Date _____ **For Off-site with Confirmation and Mark Out, No other Utility Signatures Required**

UTILITY- (PHONE/PAGER or CELL PHONE)	MARKING METHOD/COMMENTS:	SIGNATURE:	LIFE#:	Date:
Electric (2808/872-8970)	(red)			
Fire Alarm (4556/872-5082)	(orange)			
Tele/Fiber Optic (5522)	(orange)			
CATV/Satellite TV (4263)	(orange)			
Facility Specific (e.g. earth shielded accelerator beam lines, D-waste, Off-gas, Non-contact cooling water, etc.) See Work Control Manager Web Page List: Work Control Manager Web Page List				
EP Surveyor	<i>the Surveyor signoff is not required at this time</i>			

E: ADDITIONAL UTILITY MARKING: *required (in addition to section D) for machine digging 18 inches or greater in depth in developed areas, machine digging 3 feet or greater in depth in all areas, and all digging 5 feet or greater in depth in any area*

UTILITY- (PHONE/PAGER or CELL PHONE)	MARKING METHOD/COMMENTS:	SIGNATURE:	LIFE#:	Date:
Chilled Water (7136/514-1282)	(purple)			
Compressed Air (7136/514-1282)	(yellow)			
Propane (3288/872-8972)	(yellow)			
Sewer (7136/514-1282)	(green)			
Steam/Condensate (3288/872-8972)	(yellow)			
Storm Drains (7136/514-1282)	(green)			
Potable Water (7136/514-1282)	(blue)			
Non-Potable Water (7136/514-1282)	(purple)			
Natural Gas (7136/514-1282)	(yellow) Marking Expiration Date _____			

BROOKHAVEN NATIONAL LABORATORY					
DIGGING PERMIT (CONT.) NUMBER _____					
F: Toning Information (answer all questions in this section):					
List Toning Equipment Used to Locate Utility:			Instrument Tool Crib #		
1. Peak and Null Agree: Yes <input type="checkbox"/> No <input type="checkbox"/>	2. Consistent Signal Strength: Yes <input type="checkbox"/> No <input type="checkbox"/>	3. Depths are Consistent and Logical: Yes <input type="checkbox"/> No <input type="checkbox"/>			
4. Has Utility been traced to a termination Point? Yes <input type="checkbox"/> No <input type="checkbox"/>	5. Conductive Hook-up Used: Yes <input type="checkbox"/> No <input type="checkbox"/>	6. Inductive Hook-up Used: Yes <input type="checkbox"/> No <input type="checkbox"/>			
7. Comments:					
8. Date/time of toning:	9. Has another locating device been used? Yes <input type="checkbox"/> No <input type="checkbox"/> Type/Model: _____			10. Completed Checklist Attached: Yes <input type="checkbox"/> No <input type="checkbox"/>	
11. Name:	12. Signature:		13. Life #	14. Date:	
G: Project Manager's final approval:					
This permit has been properly prepared and distributed, and utilities have been clearly marked:					
Project Manager Approval Signature and Date: _____					
H: Utility Marking Evaluation:					
Prior to the start of excavation activities, Utility Markings shall be inspected and maintained according to this schedule:					
<ul style="list-style-type: none"> • Every 10 days for natural gas lines. • Every 30 days for all other utilities. 					
Enter the date of the of the last evaluation and the date of the next scheduled evaluation:					
Natural Gas: Evaluation date(s): _____					
Other Markings Evaluation date(s): _____					
<i>Note: Once excavation activities start it is the responsibility of the Contractor and/or Plant Engineering Personnel who are doing the work to inspect and maintain utility markings.</i>					
I: Excavation Personnel Acknowledgement (Contractor or Plant Engineering Personnel Performing the Work):					
I have received a briefing on the scope of work to be performed. I have reviewed the Digging Permit, marked-up utility drawings and understand the responsibility to inspect and maintain utility markings during this project.					
Date: _____ Signature: _____					
J: PRELIMINARY INSPECTION, TO BE COMPLETED BY COMPETENT PERSON: required for all excavations with "worker exposure."					
1. Name of Competent Person:	2. Company/Dept.:	3. Telephone #:	4. Preliminary Inspection? YES <input type="checkbox"/> NO <input type="checkbox"/> If no, explain:		

<p>5. Preliminary Soil Analysis Class C soil? YES <input type="checkbox"/> NO <input type="checkbox"/> If no, provide analysis and Documentation explaining why it is a different soil Type.</p>	<p>6. Special Instructions - (use of shoring, trench box, etc):</p>	<p>7. Signature:</p>	<p>8. Date:</p>
<p>9. Describe any changes in protective system:</p>		<p>10. Date of Change:</p>	<p>11. Initial:</p>
<p>12. Additional Comments:</p>			

DISTRIBUTION: PROJECT MANAGER (Original), COPIES: COMPETENT PERSON, CONSTRUCTION INSPECTOR, EP CONSTRUCTION SAFETY SPECIALIST, INFRASTRUCTURE MANAGEMENT GROUP, CONTRACTOR OR EP PERSONNEL RESPONSIBLE FOR PERFORMING THE WORK. This form was last printed on 9/5/2008 2:00:00 PM. Please verify it is the latest revision by going to the Plant Engineering Procedure Web Page:

This page intentionally blank.

APPENDIX H
COMPETENT PERSON CERTIFICATION LETTER

This page intentionally blank.

SAMPLE COMPETENT PERSON QUALIFICATION SUBMISSION

_____ is the designated competent person responsible for
_____ on the NSLS-II Project.

_____ is trained and knowledgeable in the hazards associated with this evolution, OSHA safety standards, and safe working requirements.

_____ is capable of identifying excavation hazards and has authority to take all precautions necessary to protect personnel, property and the environment from harm.

The competent person shall be responsible for:

- Implementing the project-specific Environment, Safety and Health Plan
- Making frequent daily inspections to verify proper implementation
- Taking all precautions necessary, up to and including work stoppage
- Advising BSA and workers on any approved changes to the plan
- Briefing workers on project-specific hazards
- Securing and clearly making the area during working and non-working hours
- Disciplining violators up to and including termination

Site Superintendent

Date

APPENDIX I
HOT WORK PERMIT

This page intentionally blank.

WARNING!

HOT WORK IN PROGRESS

WATCH FOR FIRE!

PART 2

INSTRUCTIONS

- Person doing Hot Work: Indicate time started and post permit at Hot Work location. After Hot Work, indicate time completed and leave permit posted for Fire Watch.
- Fire watch: Prior to leaving area, do final inspection, sign, leave permit posted and notify Firesafety Officer.
- Monitor: After 4 hours, do final inspection, sign and return to Firesafety Officer.

HOT WORK BEING DONE BY:

EMPLOYEE _____ LIFE NO. _____

CONTRACTOR _____ CO. _____

DATE _____ JOB NO. _____

LOCATION/BUILDING & FLOOR _____

NATURE OF JOB _____

NAME OF PERSON DOING FIRE WATCH _____

I verify the above location has been examined, and permission is authorized for this work.

SIGNED: (FIRE/SAFETY OFFICER) _____

DATE:

PERMIT EXPIRES	DATE	TIME
		AM PM

I verify that the List of Precautions is Understood and work will proceed only if precautions are followed:

Signed: (Supervisor) _____

FIRE WATCH SIGNOFF

Work area and all adjacent areas to which sparks and heat might have spread were inspected during the fire watch period and were found fire safe.

Signed: _____

FINAL CHECKUP

Work area was monitored following Hot Work and found fire safe.

Signed: _____

Required Precautions Checklist

MAY BE RETAINED AS RECORD OF HOT WORK ACTIVITY

- Available sprinklers, hose streams and extinguishers are in service/operable.
- Hot Work equipment in good repair.

Requirements within 35 ft (10m) of work

- Flammable liquids, dust, lint and oil deposits removed.
- Explosive atmosphere in area eliminated.
- Floors swept clean.
- Combustible floors wet down, covered with damp sand or fire-resistive sheets.
- Remove other combustibles where possible. Otherwise protect with fire-resistive tarpsaulins or metal shields
- All wall and floor openings covered.
- Fire-resistive tarpsaulins suspended beneath work.

Work on walls or ceilings

- Construction is noncombustible and without combustible covering or insulation.
- Combustibles on other side of walls moved away.

Work on enclosed equipment

- Enclosed equipment cleaned of all combustibles.
- Containers purged of flammable liquids/vapors and monitored for vapor buildup.

Fire watch/Hot Work area monitoring

- Fire watch contractor/department will supply during and for 60 minutes after work, including any coffee or lunch breaks.
- Fire watch is supplied with suitable extinguishers, charged small hose
- Fire watch is trained in use of this equipment and in sounding alarm (telephone, alarm box, radio).
- Fire watch may be required for adjoining areas, above, and below (see other precautions).
- Monitor Hot Work area for 4 hours after job is completed.

Other Precautions Taken

- False alarm with detection systems considered.
- _____

This page intentionally blank.

APPENDIX J
SAMPLE LOCK OUT/TAG OUT PROGRAM

This page intentionally blank.

Lock-Out/Tag Out Program Policy

The use of the Lock-Out/Tag-Out Program is to prevent an unexpected operation or release of energy of electrical or electronic equipment. The unexpected starting of motors may injure persons working on them, or unexpected energizing of equipment can produce an electrical shock and/or damage to the equipment. The Lock-Out/Tag-Out Program combines the use of tags and locks, or other electrical or physical systems to lock out power to the equipment while it's broken, or being worked on.

Locking and tagging key points are proven methods of controlling the release of energy or hazardous materials, and an important way of safeguarding workers who operate or repair machines or processes in the plant. This document defines lock-out/tag-out, list specific procedures to follow to properly lock-out/tag-out, define responsibility for lock-out/tag-out, and show the importance of both education and discipline in these procedures.

INTRODUCTION

The majority of accidents happen around machinery of some type. Often, the accident involves electrical shock, burns or exposure to hazardous materials or moving machinery. These accidents share one thing in common: the uncontrolled release of energy.

To protect yourself and your co-workers from danger in the workplace, you must understand that energy, left uncontrolled, can be very dangerous. Energy, simply defined, is the capacity for doing work. Kinetic (moving) energy is the force caused by the motion of an object, such as spinning flywheel. Potential (stored) energy is the unseen force inside an object when not moving, such as a spring under tension. There are many sources of energy, which can provide power to machinery. The Phase Hazard Analysis identifies specific hazardous energy sources. These may include:

- Gravity
- Electrical
- Mechanical
- Chemical
- Hydraulic
- Pneumatic
- Thermal
- Nuclear

A LOCK-OUT is simply a locking device, such as a padlock, placed on a power source to prevent the release of hazardous energy that could set a machine in motion or otherwise endanger an employee working on the machine. Locks may be used with a lock-out device that holds an energy control point, such as a switch, lever or valve, in the off position, making it impossible to operate.

A TAG-OUT is a written warning telling all others not to operate a switch or valve that could release hazardous energy or set a machine in motion. The tag-out is placed prominently on the switch or lever so as not to be missed.

RESPONSIBILITY

Locking and tagging key points are proven methods of controlling the release of energy or hazardous materials, and an important way of safeguarding workers who operate or repair equipment, or machines, and processes in the plant. This document lists specific procedures to follow to properly lock-out/tag-out, and show the importance of both education and discipline to these procedures.

It is be the responsibility of the (insert name of responsible individual) to enforce the lock-out/tag-out procedure as well as provide the necessary equipment to comply in all respects with the procedure. Transferred employees shall be instructed by their supervisor in the purpose and use of lock-out/tag-out

procedure. Supervisors shall be responsible for enforcing the specific lock-out/tag-out procedures listed below.

1. Production and support departments shall be responsible for being knowledgeable of and adhering to this procedure. No locks shall be removed from equipment without first consulting the Maintenance Department.
2. A lock-out/tag-out continued from one shift to the next shall be the responsibility of the craftsmen involved to remove the appropriate lock and replace it with a new one.
3. If more than one individual is required to lock-out or tag-out equipment, each shall place their own lock or tag on the affected equipment in such a way as to be certain the equipment is locked out. If the affected equipment cannot accept multiple locks or tags, a multiple lock-out or tag-out hasp shall be used.

EQUIPMENT

Equipment shall consist of the following:

1. Padlocks. Sufficient quantities of padlocks, each lock to have an individual key, and one master key controlled by maintenance supervision.
2. Multiple lock tongues. To be used in case more than one department is involved in a job.
3. Danger/Warning tags. To be used wherever it is necessary to warn maintenance employees, and operators of a repair.

Equipment shall be distributed and controlled by (insert name of responsible individual).

WHEN TO LOCK-OUT-TAG-OUT

Most equipment is designed with safe switches, disabling the equipment for minor repair or calibration during normal operation. In general, these switches provide adequate protection for minor repair which is routine, repetitive, and necessary to the normal use of the equipment. Lock-out/tag-out procedures shall be used for the following situations:

1. Major repairs or overhaul.
2. When working alone, out of visual contact of the controlling switch.
3. Anytime there is danger of injury from an unexpected release of energy.
4. Any situation that threatens an employee's safety.

LOCK-OUT/TAG-OUT PROCEDURES

The following are specific procedures to be followed for lock-out/tag-out:

1. Notify all affected areas and employees of the impending lockout situation, the reason for it and estimated start and duration times.
2. Equipment shutdown and isolation. Place all switches in the "off" or "safe" position. Disconnect sources of power, ensuring all sources of both primary and secondary power to the equipment are interrupted.
3. Dissipate residual energy. Shutting down equipment does not mean there is no energy left in it. Check for trapped pressure or residual electricity in the system.

4. Lock-out or tag-out all in-line points of control. In most cases, this may be more than one place, or more than one lock, if several people are working on the equipment.
5. Lock-out verification. Take nothing for granted. Verify that the locked-out switch or control cannot be overridden. Test the equipment to be certain that the locked-out switch is de-energized & not simply malfunctioning. Press all start buttons or valves to see if the equipment starts. Ensure the system you are working on is the same one that has been locked out.
6. Perform the work scheduled. Try to foresee all possible hazards. Ensure the new/repair work does not bypass the lockout and reactivate the system.
7. Lock and/or tag removal. All locks and tags are to be left in place until work is completely finished. This is especially true when more than one employee is working on the equipment. A lock is never to be removed except by the person who placed it there.

NOTE: Only immediate supervisors are to authorize emergency removal of a lock or tag. The individual who applied the tag must be notified that the tag is being removed.

8. Equipment start up. Make a final safety check before restarting equipment, to be certain it is safe to operate. Make sure of the following:
 - a. All tools and other items have been removed.
 - b. All machine guards are returned to their proper position.
 - c. All electric, hydraulic, pneumatic or other systems are properly reconnected.
 - d. All employees are clear of equipment.

Many of the lock-out/tag-out procedures appear to be common sense, and they are. Following them will ensure safe operation calibration, maintenance and repair of equipment and/or processes, without dangerous surprises or injury.

WORKING ON OR NEAR ENERGIZED CIRCUITS

- It is the policy of (insert company name) that, except under extreme circumstances, work shall not be done on energized circuits.
- Justification must be made to the NSLS-II ES&H Manager, the BSA Construction Inspector and the BSA Construction Safety Engineer of the need to work on energized circuits.
- Work with voltages less than 50 volts (in BSA Range "A") is not considered working on or near energized conductors. Energized parts that operate at less than 50 V to ground are not required to be de-energized if there must be no increased exposure to electrical burns or to explosion due to electric arcs. BSA will issue energized work permits.
- Energized work permits shall address, as a minimum, the following elements:
 - 1) A description of the circuit and equipment to be worked on and their location;
 - 2) Justification for why the work must be performed in an energized condition;
 - 3) A description of the safe work practices to be employed;
 - 4) Results of the shock hazard analysis;
 - 5) Determination of shock protection boundaries;
 - 6) Results of the flash hazard analysis;
 - 7) The Flash Protection Boundary;
 - 8) The necessary personal protective equipment to safely perform the assigned task;
 - 9) Means employed to restrict access of unqualified persons from the work area;
 - 10) Evidence of completion of a job briefing, including a discussion of any job-specific hazards (Include in Phase Hazard Analysis);

- 11) Energized work approval signature as indicated above
- For all energized work, regardless of the voltages, the appropriate personal protective equipment must be worn.
 - Work performed on or near energized circuits performed by qualified persons related to testing, troubleshooting, voltage measuring, etc., is permitted without an energized work permit, provided appropriate safe work practices and personal protective equipment in accordance with NFPA 70-E is used.

EDUCATION AND DISCIPLINE

The key to worker safety is education. The purpose of this document is to ensure that everyone understands the importance of lock-out/tag-out and how to recognize when it is in use. These elements shall be covered during initial contractor/vendor orientation and during the pre-job and periodic "tool-box" talks. By educating all employees to the importance of following proper safety procedures, a safer working environment can be ensured.

As with all safety procedures, a fair uniform enforcement of discipline must be in place. Employees are responsible for their own safety, the safety of their fellow employees and the safety of the facility. Violating lock-out/tag-out procedures is a major safety violation and will subject the employee to immediate discipline.

This page intentionally blank.

APPENDIX K
ENERGIZED ELECTRICAL PERMIT

This page intentionally blank.

Department Code _____ **ENERGIZED ELECTRICAL WORK PERMIT** Permit # _____ Procedure # _____
 Job/Work Order Number _____

PART I: TO BE COMPLETED BY THE REQUESTER:

- (1) Description of circuit/equipment/job location:

 - (2) Description of work to be done:

 - (3) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage:

- Start Date: _____ Expire Date: _____
 Requester/Title _____ Date _____

PART II: TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK:

- (1) Detailed job description procedure to be used in performing the above detailed work including hazards, conditions, mechanical, environmental, space obstructions, other voltages: _____
- (2) Description of the Safe Work Practices: LOTO Two Workers Safety Watch Notify affected workers _____
 Reason not to LOTO _____
 Restart Checks Required: _____

(3)	Flash Hazard (-1 to 4)		Shock Hazard (max V)		Working Distance	
	Flash Boundary		Limited Approach		Glove Class, minimum	
	Incident Energy (cal/cm ²)		Restricted Approach			
			Prohibited Approach			

(4) Protective Equipment

<input type="checkbox"/> Natural Fiber Clothing	<input type="checkbox"/> Safety Glasses/Goggles	<input type="checkbox"/> Ear Plugs	<input type="checkbox"/> Leather Shoes
<input type="checkbox"/> FR Clothing	<input type="checkbox"/> Face Shield	<input type="checkbox"/> Leather Gloves	<input type="checkbox"/> Voltage-rated Shoes
<input type="checkbox"/> Voltage-rated Tools	<input type="checkbox"/> Balaclava Hood	<input type="checkbox"/> Voltage-rated Gloves	<input type="checkbox"/> Hard Hat
<input type="checkbox"/> Category III Meter	<input type="checkbox"/> 2 Layer Switching Hood	<input type="checkbox"/> Flashsuit	<input type="checkbox"/> Other

Other _____
 (5) Means employed to restrict the access of unqualified persons from the work area: _____

(6)	Authorized Workers	Life #	Authorized Workers	Life #
	_____	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____

PART III: APPROVAL(S) TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED:

NSLS-II ESH Manager (or designee) _____ Date _____ Electrically Knowledgeable Person/ Engineer _____ Date _____
 Independent Reviewer (Range D only) _____ Date _____

PART IV: WORK

Evidence of completion of Job Briefing including discussion of any job-related hazards:

PART V: POST WORK-FEEDBACK _____ (Worker Initials)

NSLS-II ESH Manager _____ Close-out Date _____
 Return to: NSLS-II ESH Manager

This page intentionally blank.

APPENDIX L
EXAMPLE OF HAZCOM TRAINING PROGRAM

This page intentionally blank.

HAZARD COMMUNICATION TRAINING PROGRAM

1. Initial Assignment Information and Training

- a) The **(insert job title)** shall train new employees in hazard communication and protection procedures as part of their general orientation before the new employees begin work.
- b) The **(insert job title)** is responsible for training affected employees whenever new hazardous chemicals are introduced into the workplace. This responsibility extends to provide additional training, as required, for existing employees reassigned into new positions.
- c) All current employees shall be trained in the elements of **(Insert Company Name)** hazard communication program by **(insert contract start date)**.

2. Curriculum

- a) All employees shall be provided with the following information:
 - 1) Employees shall be informed that **(insert company name)** is required by law to have a chemical hazard communication program.
 - 2) Employees shall be informed of the details of **(Insert Company Name)** chemical hazard communication program including:
 - The location and ready availability of a list of all hazardous chemicals used by the company
 - A list of all hazardous chemicals known to be present in the work area is kept at **(insert location)** and is available for review by employees during each work shift
 - The location and ready availability of Material Safety Data Sheets (MSDS) for hazardous chemicals used within the company
 - Specific operations or tasks in the employees' work area that use hazardous chemicals
- b) All employees shall receive training as follows:
 - 3) Employees shall be trained in methods and observations to detect the presence of hazardous chemicals.
 - 4) Employees shall be trained regarding the specific physical and health hazards of known hazardous chemicals in the employees' work area.
 - 5) Employees shall be trained in protective measures including the use of personal protective equipment and protective measures implemented by **(Insert Company Name)**, including work procedures.
 - 6) Employees shall be trained in understanding, interpreting and using hazard information provided on labels and in the MSDS.

3. Training Program Completion

All ***(insert company name)*** employees are required to successfully complete the ***(Insert Company Name)*** hazard-communications training program. Employees are required to follow safe and healthy work practices as a condition of employment.

4. Non-Routine Tasks

Training for hazard protection during non-routine tasks is the responsibility of the ***(insert supervisor or other job title)*** and shall be provided as needed.

5. Foreseeable Emergencies

Training for hazard protection during foreseeable emergencies (such as fires, floods, spills, etc.) shall be provided to all affected employees as part of their general safety training.

6. Sub-Contractor Employees

The employer of sub-contractors required to work on this project shall be informed of the hazard communication program. While the sub-contractor is responsible for their own employees' training, ***(Insert Company Name)*** shall attempt to answer sub-contractor employees' questions about workplace hazards.

The MSDS and list of hazardous materials shall be available to sub-contractor employees as well.

This page intentionally blank.

APPENDIX M
CRITICAL LIFT EVALUATION FORM

This page intentionally blank.

CRITICAL LIFT EVALUATION FORM (CLEF)

- CRITICAL LIFT
- PRE-ENGINEERED LIFT

PERSON REQUESTING THE LIFT

PRINT NAME _____ **DEPT/DIV.** _____ **DATE** _____

PERSON IN CHARGE (PIC)

Print Name _____

PIC must be present during the entire CRITICAL LIFT and be QUALIFIED to resolve any question or problems that might arise during the lifting operation.

DETERMINING FACTOR FOR CRITICAL LIFT

- _____ Load is greater than 85% of mobile crane rated capacity, or greater than 90% of rated fixed crane capacity (excluding proof tests of 100 to 125% rated capacity) , or greater than 50 tons.
- _____ Two or more cranes/booms are required or special hoisting/rigging equipment will be used.
- _____ Potential for release of radioactive/hazardous materials due to collision, or upset of load.
- _____ Damage that would result in more than 3 weeks or 30% delay to schedule, or monetary value damages of \$250,000 or greater.

OPERATING EQUIPMENT (mobile crane)

Type of Crane _____ Manufacturer _____
 Model No. _____ Serial No. _____
 Manufacturer Restriction for WIND SPEED _____ (no lifts at wind speeds of 25 mph or greater)
 Crane Equipped with Anemometer (Y/N) _____ (If not, use BNL Weather Station.)
 Copies of Latest Annual Inspection _____ Latest Calibration Date of Instruments _____
 Operator Licensed for Equipment _____ Expiration Date _____

OPERATING EQUIPMENT (overhead cranes)

Type of Crane _____ Manufacturer _____
 Capacity _____ Latest Calibration Date of Instruments _____
 Date of Latest Annual Inspection _____ Operator's SAC Expiration Date _____

DESCRIPTION OF ITEMS TO BE LIFTED

(Continued next page)

HOW WEIGHT OF OBJECT OBTAINED

- A. Certified Weight Scale _____ Ticket # _____
- B. Calculated independently by more than one source:
 - 1. Source _____ Weight _____
 - 2. Source _____ Weight _____
- C. If lift is an existing item (being removed or demolished), the weight must be recalculated, taking into account all modifications, including internal, as well as an allowance for scale, sediment, sludge, and insulation. Calculation worksheets shall be included in the Lift Plan and have a PE stamp or be signed off by a qualified person. **Note:** When weights are calculated, a 10% tolerance margin shall be added. This value may be increased at the discretion of the Lifting Safety Committee.
- D. Shipping Manifests Weight _____ Manufacturer Data Weight _____

CENTER OF GRAVITY (CG)

CG will be marked onto load, and a drawing included showing how it was determined.

25.0 DESCRIPTION & WEIGHT OF ALL RIGGING EQUIPMENT & CRANE ATTACHMENTS

Type	Rated Capacity	Weight
Slings (type):		
Shackles		
Lifting rings/ eyebolts		
Rigging hooks		
Load block/jib		
Spreader bars/below the hook lifting devices NOTE: Must comply with ASME B30.20 Standard for Design, Testing, and Appropriate Markings. 200% test documentation for below the hook rigging: _____		

WEIGHT OF OBJECT, RIGGING EQUIPMENT, & CRANE ATTACHMENTS

Source _____ Total Weight _____

(Continued next page)

EQUIPMENT AND LIFT RELATIONSHIP

- A. Maximum Operating Radius: _____
- B. Planned Operating Radius: _____
- C. Allowable load at maximum lift radius anticipated (from Load Chart): _____
- D. Ratio of Lift to Allowable Load: _____
- E. Clearance between Boom & Lift: _____
- F. Clearance to Surrounding Facilities/Utilities: _____
- G. Clear Path for Load Movement: _____

STABILITY OF GROUND AREA

- A. Soil Bearing Capacity: _____ Source: _____
- B. Mats Required: _____ Size & Number: _____
- C. Underground Utilities Location: _____
- D. Ratio of Soil Bearing Capacity to Actual: _____

LIFTING OPERATION

A detailed drawing, to scale, MUST be included showing the Set-up Area, Lifting Area, Load Placement Area, and Sling Attachment Points w/sling angle reduction factor. A documented Critical Lift Plan or Pre-engineered Lift Procedure, as applicable, shall be included.

26.0 INSPECTION OF CONTRACTORS EQUIPMENT

All contractors' Lifting and Rigging Equipment must be inspected before being brought onto the BNL Site by BSA Hoisting & Rigging Inspector. Contact: John Hynan: (631) 344-5456

27.0 LIFT APPROVAL SIGNATURES

- Professional Engineer/ Qualified Person: _____
- Person in Charge (PIC) (Critical Lift): _____
- Operator of Equipment (Critical Lift): _____
- Responsible Manager or Designee: _____
- Lifting Safety Committee Recommendation: Approve: _____ Disapprove: _____
- LSC Committee Chair: _____

FINAL APPROVAL SIGNATURE:

NSLS-II Conventional Facilities, Division Director _____

28.0 PRE-LIFT MEETING

Date: _____ Time: _____ Location: _____

29.0 LIST OF ALL ATTACHMENTS

32.0 GENERIC LIFT PLAN (EXAMPLE)

Building #: **735** Project Title: **CFN/NANO**
 Location: **CFN/NANO Site** **Generic Lifting for General Deliveries**

Material to be removed from delivery truck and placed into building by use of delivery trucks boom.
 (w/capacities of 3 Tons or less)

Qualified Person(s):

Material to be lifted: _____ Weight: _____ CG: _____

Note: All lifting operations shall be conducted in accordance with applicable ANSI standards and OSHA requirements.

Equipment List	Type	Qty.	Dimensions	Capacity	Configuration	Load
30.0	SLINGS	As req'd				< 3 T
	Shackles	As req'd				< 3 T
	Roller/Skates	N/A				
	Jacks	N/A				
	Cribbing/Shoring	As req'd				
	Hoist	N/A				
	Lifting Vehicles	Delivery boom truck				
	PPE/HAZMAT	Hard hats, safety shoes, safety glasses, reflective vest				
	Transport Vehicles	N/A				
	Restricted area below lift	As Req'd				

This page intentionally blank.

APPENDIX O
CONTRACTOR'S CERTIFICATION LETTER

This page intentionally blank.

COMPANY LETTERHEAD

Date: _____
Brookhaven National Laboratory
Bldg. 817
Upton, N.Y. 11973
Attn: Mr. Martin Fallier
NSLS-II Conventional Facilities, Division Director

Re: Contract No _____
Job Title: NSLS-II Ring Building Conventional Construction
Job No: _____
Bldg. No: _____

Dear Mr. Fallier:

In conformance with the requirements of the construction documents for the above project, the following information is submitted on our company's construction safety program:

- Copy of the company's record of injuries and accidents (OSHA 300 logs for 2004-2006)
- Insurance experience modification rate for 2004-2007
- Environmental compliance records (if applicable) for past five years, including fines, Administrative Consent Orders, and Notices of Violations.
- The attached Construction Environment, Safety and Health Plan

We understand that Brookhaven National Laboratory is an ISO 14001 Registered Organization. All construction and environmental work shall conform to the applicable requirements of this program. **(Insert Name of the NSLS-II General Construction Contractor)** its employees and subcontractors shall follow the BSA requirements listed in its Standards Based Management System (SBMS) <https://sbms.bnl.gov/> pertaining to: Work Planning and Control for Operations, Emergency Response/Spill Response, Waste Management (radiological, hazardous, mixed, medical, industrial), Chemical Handling and Use (RCRA, OSHA), Land Use Restrictions (Wetlands, Pine Barrens, Endangered Species), Liquid Effluents.

(Insert Name of the NSLS-II General Construction Contractor) its employees and subcontractors shall comply with the applicable requirements established in the SBMS <https://sbms.bnl.gov/> and the attached Environment, Safety and Health Plan, Environment, Safety and Health Standards of the SBMS are located at: <https://sbms.bnl.gov/SBMSearch/LD/ld08/ld08t011.htm> for review and use. Where the requirements specified in the SBMS exceed the requirements of the OSHA standards, the BSA requirements shall take precedence.

BSA shall provide all appropriate permits required by these standards. **(Insert Name of the NSLS-II General Construction Contractor)** shall verify that these permits are current for the scope of work and updated, with appropriate approvals, to reflect any changes to the scope of work, and shall abide by the requirements of the permit.

This letter also certifies that **(Insert Name of the NSLS-II General Construction Contractor)** is aware of, understands and shall comply with the safety regulations of the OSHA Standard 29 CFR 1926 and 29 CFR 1910 and Department of Energy Standard 10 CFR 851.

In addition, **(Insert Name of the NSLS-II General Construction Contractor)** understands that the BSA Standards Based Management System (SBMS) is available, on line, for our review and use and we shall comply with applicable safety requirements for this project.

Yours truly,

Title:

This page intentionally blank.

Page Intentionally Left Blank

Enclosure 2 - Offeror Representations and Certifications

- 1. AMS Form 009 Representations and Certifications – Procurement Specific**
- 2. AMS Form 010 Representations and Certifications – Supplier Information**

Page Intentionally Left Blank

PROCUREMENT AND PROPERTY MANAGEMENT DIVISION

Form No. **AMS-Form-009**

BROOKHAVEN NATIONAL LABORATORY

Revision No. 4

Managed by Brookhaven Science Associates, LLC
under contract to the U.S. Department of Energy

APPROVED BY:

M. F. Healey / 2/22/07

ACQUISITION MANAGEMENT SYSTEM FORM

PPM Manager/Date

Representations and Certifications – Procurement Specific

Solicitation Number: _____
Company Name: _____
Certifying Official: _____, _____

I Annual Representations and Certifications

The offeror has:

- (1) Submitted to the BSA's Procurement and Property Management Division annual representations and certifications AMS-Form-010, dated _____ that are incorporated herein by reference, and are current, accurate, and complete as of the date of this proposal, except as follows:
- (2) Enclosed its annual representations and certifications.
- (3) AMS-Form-010, Annual Representations and Certifications will be completed prior to award of any contract or purchase order.

II Buy American Act Certificate

- (1) The offeror certifies that each end product, except those listed in paragraph (2) of this section, is a domestic end product and that the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products.

- (2) Foreign End Products:

Line Item No.	Country of Origin

III Certification Regarding Debarment, Suspension, Proposed Debarment, and Other Responsibility Matters

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. AMS-FORM-009

Revision No. 4

Page 2 of 10

**Representations and Certifications – Purchase Order
Specific**

- (1) (a) The Offeror certifies, to the best of its knowledge and belief, that-
- (i) The Offeror and/or any of its Principals-
- (A) Are are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
- (B) Have have not , within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and
- (C) Are are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.
- (ii) The Offeror has has not , within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.
- (b) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This Certification Concerns a Matter Within the Jurisdiction of an Agency of the United States and the Making of a False, Fictitious, or Fraudulent Certification May Render the Maker Subject to Prosecution Under Section 1001, Title 18, United States Code.

- (2) The Offeror shall provide immediate written notice to BSA's Contractual Representative if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (3) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by BSA's Contractual Representative may render the Offeror nonresponsible.
- (4) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. AMS-FORM-009

Revision No. 4

Page 3 of 10

**Representations and Certifications – Purchase Order
Specific**

normally possessed by a prudent person in the ordinary course of business dealings.

- (5) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to BSA and the Government, BSA's Contractual Representative may terminate the contract resulting from this solicitation for default.

IV Place of Performance

- (1) The performance of any purchase orders or contracts resulting from this solicitation will be performed outside the United States and for which no recruitment of workers within the United States is involved, True or False, If True no further questions must be answered and this form is complete. If False continue.
- (2) The offeror in the performance of any contract resulting from this solicitation, intends, does not intend to use one or more plants or facilities located at a different address from the address of the offeror as indicated in this proposal or response to request for information.
- (3) If the offeror checks "intends" in paragraph (1) of this provision, it shall insert in the following spaces the required information:

Place of Performance (Street Address, City, State, County, Zip Code)	Name and Address of Owner and Operator of the Plant or Facility if Other than Offeror

V Previous Contracts and Compliance Reports

The offeror represents that-

- (1) It has, has not participated in a previous contract, or subcontract, subject to FAR 52.222-26, Equal Opportunity,
- (2) It has, has not filed all required compliance reports; and
- (3) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

VI Affirmative Action Compliance

The offeror represents that-

- (1) It has developed and has on file, has not developed and does not have on file, at each

BROOKHAVEN NATIONAL LABORATORY ACQUISITION MANAGEMENT FORM	Procedure No. AMS-FORM-009 Revision No. 4 Page 4 of 10
Representations and Certifications – Purchase Order Specific	

establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2); or

- (2) It has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

+

The following Representations and Certifications are required for all Non Commercial Procurements

+

VII Property

The offeror represents that-

- (1) Government-owned property is or is not contemplated under this contract. If yes: Government-Furnished Property or Contractor Acquired Property.
- (2) It does have or does not have a property control system.
- (3) This system has or has not been approved by a Government or Brookhaven official. If it has been approved list the name and address of the approving official:

VIII Rights to Proposal Data (Technical)

Except for data contained on pages _____, it is agreed that as a condition of award of a contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data-General" clause contained in the contract) in and to the technical data contained in the proposal dated _____, upon which the contract is based.

IX Representation of Limited Rights Data and Restricted Computer Software

- (1) The statement of work sets forth the work to be performed if a contract award results, and BSA's known delivery requirements for data (as defined in FAR 27.401). Any data delivered under the resulting contract will be subject to Rights in Data – Facilities, DEAR 970.5227-1 that is to be included in the contract.
- (2) The offeror has reviewed the requirements for the delivery of data or software and states-

None of the data proposed for fulfilling such requirements qualifies as limited rights data or restricted computer software.

Data proposed for fulfilling such requirements qualify as limited rights data or restricted computer software and are identified as follows:

BROOKHAVEN NATIONAL LABORATORY ACQUISITION MANAGEMENT FORM	Procedure No. AMS-FORM-009 Revision No. 4 Page 5 of 10
Representations and Certifications – Purchase Order Specific	

Note: "Limited rights data" and "Restricted computer software" are defined in the contract clause entitled "Rights in Data – Facilities."

+

The following Representations and Certifications are required for all Procurements greater than \$100,000

 +

X Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions

- (1) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989-
- (a) No Federal appropriated funds have been paid, or will be paid, to any person for influencing, or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;
 - (b) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the BSA Procurement and Property Management Division; and
 - (c) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

+

The following Representations and Certifications are required for all Procurements greater than \$100,000 that are competitively awarded

 +

XI Certification of Toxic Chemical Release Reporting

- (1) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. **AMS-FORM-009**

Revision No. 4

Page 6 of 10

**Representations and Certifications – Purchase Order
Specific**

- (2) By signing this offer, the offeror certifies that-
- (a) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or
 - (b) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: [Check each block that is applicable.]
 - (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;
 - (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);
 - (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);
 - (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:
 - (A) Major group code 10 (except 1011, 1081, and 1094).
 - (B) Major group code 12 (except 1241).
 - (C) Major group codes 20 through 39.
 - (D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).
 - (E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or
 - (v) The facility is not located in the United States or its outlying areas.

+

The following Representations and Certifications are required for all Procurements greater than \$100,000 that result in a Firm Fixed Price (FFP) Contract

+

XII Certificate of Independent Price Determination

- (1) The offeror certifies that-

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. **AMS-FORM-009**

Revision No. 4

Page 7 of 10

**Representations and Certifications – Purchase Order
Specific**

- (a) The prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other offeror or competitor relating to-
 - (i) Those prices;
 - (ii) The intention to submit an offer; or
 - (iii) The methods or factors used to calculate the prices offered.
 - (b) The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a negotiated solicitation) unless otherwise required by law; and
 - (c) No attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.
- (2) Each signature on the offer is considered to be a certification by the signatory that the signatory-
- (a) (i) Is the person in the offeror's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to paragraphs (1)(a) through (1)(c) of this provision; or
 - (b) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to paragraphs (1)(a) through (1)(c) of this provision _____ [insert full name of person(s) in the offeror's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the offeror's organization];
 - (ii) As an authorized agent, does certify that the principals named in subdivision (2)(b)(i) of this provision have not participated, and will not participate, in any action contrary to paragraphs (1)(a) through (1)(c) of this provision; and
 - (iii) As an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (1)(a) through (1)(c) of this provision.
- (3) If the offeror deletes or modifies paragraph (1)(b) of this provision, the offeror must furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

+

The following Representations and Certifications are required for all Procurements greater than \$500,000

+

XIII Cost Accounting Standards Notices and Certification

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by numbers 1 through 3.

BROOKHAVEN NATIONAL LABORATORY ACQUISITION MANAGEMENT FORM	Procedure No. AMS-FORM-009 Revision No. 4 Page 8 of 10
Representations and Certifications – Purchase Order Specific	

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part B does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

(1) Disclosure Statement-Cost Accounting Practices and Certification

- (a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.
- (b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part 1 of this provision.

Caution: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

- (c) Check the appropriate box below:
 - (i) Certificate of Concurrent Submission of Disclosure Statement. The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows:
 - (A) Original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable; and
 - (B) One copy to the cognizant Federal auditor. (Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement:

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. **AMS-FORM-009**

Revision No. 4

Page 9 of 10

**Representations and Certifications – Purchase Order
Specific**

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

- (ii) Certificate of Previously Submitted Disclosure Statement. The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

- (iii) Certificate of Monetary Exemption. The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling \$50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise BSA's Procurement and Property Management Division immediately.

- (iv) Certificate of Interim Exemption. The offeror hereby certifies that
- (A) the offeror first exceeded the monetary exemption for disclosure, as defined in (iii) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and
- (B) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to BSA's Procurement and Property Management Division, in the form specified under paragraph (c)(i) or (c)(ii) of Part 1 of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

- (d) Certificate of Disclosure Statement Due Date by Educational Institution. If the offeror is an educational institution that, under the transition provisions of 48 CFR 9903.202-1(f), is or will be required to submit a Disclosure Statement after receipt of this award, the offeror hereby certifies that (check one and complete):

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Procedure No. **AMS-FORM-009**

Revision No. 4

Page 10 of 10

**Representations and Certifications – Purchase Order
Specific**

- (i) A Disclosure Statement Filing Due Date of _____ has been established with the cognizant Federal agency.
- (ii) The Disclosure Statement will be submitted within the 6-month period ending _____ months after receipt of this award.

Name and Address of Cognizant ACO or Federal Official Where Disclosure Statement is to be Filed:

Caution: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (d). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

(2) Cost Accounting Standards-Eligibility for Modified Contract Coverage

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

Caution: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$50 million or more.

(3) Additional Cost Accounting Standards Applicable to Existing Contracts

The offeror shall indicate below whether award of the contemplated contract would, in accordance with paragraph (1)(c) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts. yes no

<p>PROCUREMENT AND PROPERTY MANAGEMENT DIVISION</p> <p>BROOKHAVEN NATIONAL LABORATORY Managed by Brookhaven Science Associates, LLC under contract to the U.S. Department of Energy</p> <p>ACQUISITION MANAGEMENT SYSTEM FORM</p>	<p>Form No. AMS-Form-010</p> <p>Revision No. 2.1</p> <p>APPROVED BY: <u>D. Rawlings 04/09/08</u></p> <hr/> <p>PPM Manager/Date</p>
REPRESENTATIONS AND CERTIFICATIONS – SUPPLIER INFORMATION	

Company Name _____.

Address _____.

_____.

_____.

Phone Number _____.

Fax Number _____.

Email Address _____.

Certifying Official

Name: _____.

Title: _____.

Date: _____.

Solicitation #: _____.

Sol. Date: _____.

Vendor Status: New Inactive Active

Vendor Code: _____.

Initial Certification Annual Recertification Address Change Type of Organization Change

Small Business Program Representation Change

Invoice Information

Company Name _____.

Address _____.

_____.

_____.

_____.

Remit Information

Company Name _____.

Address _____.

_____.

_____.

_____.

Taxpayer Identification

Taxpayer Identification Number (TIN).

- TIN: _____.
- TIN has been applied for.
- TIN is not required because:
 - Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;
 - Offeror is an agency or instrumentality of a foreign government;
 - Offeror is an agency or instrumentality of the Federal Government.

Type of organization

- Sole proprietorship;
- Partnership;

**BROOKHAVEN NATIONAL LABORATORY
ACQUISITION MANAGEMENT FORM**

Form No. **AMS-Form-010**

Revision No. 2.1

Page 2 of 4

**REPRESENTATIONS AND CERTIFICATIONS –
SUPPLIER INFORMATION**

- Corporate entity (not tax-exempt);
- Corporate entity (tax-exempt);
- Educational Institution;
- Government entity (Federal, State, or local);
- Foreign government;
- International organization per 26 CFR 1.6049-4;
- Other: _____.

The [North American Industry Classification System \(NAICS\) Code](#) (Replaces the SIC Code)

NAICS Code _____.

Common parent

- Offeror is not owned or controlled by a common parent
- Name and TIN of common parent:
Name _____.
TIN _____.

Small Business Program Representations

The [small business size standard](#) for your NAICS Code is _____.

Note: The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

Representations

- (1) The offeror represents that it is, is not a small business concern.
- (2) The offeror represents, for general statistical purposes, that it is, is not, a small disadvantaged business concern as defined in 13 CFR 124.1002.
- (3) The offeror represents that it is, is not a women-owned small business concern.
- (4) The offeror represents that it is, is not a veteran-owned small business concern.
- (5) The offeror represents that it is, is not a service-disabled veteran-owned small business concern.
- (6) The offeror represents that it is, is not a HUBZone small business concern listed, on the date of this representation, on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration, and no material change in ownership and control, principal office, or HUBZone employee percentage has occurred since it was certified by the Small Business Administration in accordance with 13 CFR part 126.

BROOKHAVEN NATIONAL LABORATORY ACQUISITION MANAGEMENT FORM	Form No. AMS-Form-010 Revision No. 2.1 Page 3 of 4
REPRESENTATIONS AND CERTIFICATIONS – SUPPLIER INFORMATION	

Small Disadvantaged Business Status

Representations

- (1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and
- (A) No material change in disadvantaged ownership and control has occurred since its certification;
- (B) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (C) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration; or
- (2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted.

Definitions

Taxpayer Identification Number (TIN)

Means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a Social Security Number or an Employer Identification Number.

Common Parent

Means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

Small Business Concern

Means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard for the listed NAICS.

Women-Owned Small Business Concern

Means a small business concern

- (1) That is at least 51 percent owned by one or more women; or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and

BROOKHAVEN NATIONAL LABORATORY ACQUISITION MANAGEMENT FORM	Form No. AMS-Form-010 Revision No. 2.1 Page 4 of 4
REPRESENTATIONS AND CERTIFICATIONS – SUPPLIER INFORMATION	

- (2) Whose management and daily business operations are controlled by one or more women.

HUB Zone Small Business Concern

Means a small business concern that is small as defined by § 126.203, is exclusively owned and controlled by persons who are United States citizens, and has its principal office located in a HUBZone.

Veteran-Owned Small Business Concern

Means a small business concern

- (1) Not less than 51 percent of which is owned by one or more veterans (as defined at 38 U.S.C. 101(2)) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans; and
- (2) The management and daily business operations of which are controlled by one or more veterans.

Service-Disabled Veteran-Owned Small Business Concern

(1) Means a small business concern-

- (i) Not less than 51 percent of which is owned by one or more service-disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and
- (ii) The management and daily business operations of which are controlled by one or more service-disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.
- (2) **Service-Disabled Veteran** means a veteran, as defined in 38 U.S.C. 101(2), with a disability that is service-connected, as defined in 38 U.S.C. 101(16).

Enclosure 3 - AMS Form 017 Bid Bond Form

Page Intentionally Left Blank

PROCUREMENT AND PROPERTY MANAGEMENT DIVISION

BROOKHAVEN NATIONAL LABORATORY
Managed by Brookhaven Science Associates, LLC
under contract to the U.S. Department of Energy

ACQUISITION MANAGEMENT SYSTEM FORM

Form No. AMS-Form-017

Revision No. 0.1

APPROVED BY:

D. Rawlings 04/09/08

PPM Manager/Date

Bid Bond

Date Bond Executed (*Must not be later than Bid Opening Date*):

PRINCIPAL (Legal name and business address)

Legal Name:

Address:

City, St. Zip ,

Type of Organization ("X" one)

Individual

Partnership

Joint Venture

Corporation

State of Incorporation:

SURETY(IES) (Name and business address)

Name:

Address:

City, St. Zip ,

PENAL SUM OF BOND

BID IDENTIFICATION

Percent of Bid Price

Amount Not to Exceed

Million(s)

Thousand(s)

Hundred(s)

Cents

Bid Date

Invitation Number:

For (Construction, Supplies or Services)

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the Brookhaven Science Associates L.L.C. and any successor Contractor to operate Brookhaven National Laboratory, (hereinafter called the Obligee) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal – (a) upon acceptance by the Obligee of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Obligee for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Obligee. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL

Signature(s)

1.

(Seal)

2.

(Seal)

3.

(Seal)

Corporate Seal

Name(s) and Title(s) typed

1.

2.

3.

**PROCUREMENT AND PROPERTY MANAGEMENT DIVISION
ACQUISITION MANAGEMENT SYSTEM FORM**

Form No. AMS-Form-017

Bid Bond (Continued)

INDIVIDUAL SURETY(IES)

Signature(s)	1.	2.
	(Seal)	(Seal)
Name(s) (Typed)	1.	2.

CORPORATE SURETY(IES)

SURETY A	Name: Address:	State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:			
	Signature(s)	1.	2.	
	Name(s) and Title(s) typed	1.	2.	
SURETY B	Name: Address:	State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:			
	Signature(s)	1.	2.	
	Name(s) and Title(s) typed	1.	2.	
SURETY C	Name: Address:	State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:			
	Signature(s)	1.	2.	
	Name(s) and Title(s) typed	1.	2.	
SURETY D	Name: Address:	State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:			
	Signature(s)	1.	2.	
	Name(s) and Title(s) typed	1.	2.	

**PROCUREMENT AND PROPERTY MANAGEMENT DIVISION
ACQUISITION MANAGEMENT SYSTEM FORM**

Form No. AMS-Form-017

Bid Bond (Continued)

SURETY E	Name: Address:		State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:	, ,			
	Signature(s)	1.	2.		
	Name(s) and Title(s) typed	1.	2.		
SURETY F	Name: Address:		State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:	, ,			
	Signature(s)	1.	2.		
	Name(s) and Title(s) typed	1.	2.		
SURETY G	Name: Address:		State of Inc.	Liability Limit (\$)	Corporate Seal
	City, St. Zip:	, ,			
	Signature(s)	1.	2.		
	Name(s) and Title(s) typed	1.	2.		

Instructions

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Procurement and Property Management Division Manager.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the Page 1 of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., 20% of the bid price but the amount not to exceed ____ dollars).
4.
 - a. Corporations executing the bond as sureties must appear on the Department of Treasury's list of approved sureties and must act within the limitations listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designated "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.
 - b. Where individual sureties are involved, a completed Affidavit of Individual surety (Form 28), for each individual surety, shall accompany the bond. The Obligee may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal", and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror".

Page Intentionally Left Blank

Enclosure 4 – SF 1413 – Statement and Acknowledgement

Page Intentionally Left Blank

STATEMENT AND ACKNOWLEDGMENTOMB No.: **9000-0014**
Expires: 4/30/2008

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat, (VIR), Regulatory and Federal Assistance Division, GSA, Washington, DC 20405; and to the Office of Management and Budget, Paperwork Reduction Project (9000-0014), Washington, DC 20503.

PART I - STATEMENT OF PRIME CONTRACTOR

1. PRIME CONTRACT NO. DE-AC-02-98CH10886		2. DATE SUBCONTRACT AWARDED		3. SUBCONTRACT NUMBER 7700000004	
4. PRIME CONTRACTOR			5. SUBCONTRACTOR		
a. NAME Brookhaven Science Associates, L.L.C			a. NAME		
b. STREET ADDRESS Bldg 460			b. STREET ADDRESS		
c. CITY Upton		d. STATE NY	e. ZIP CODE 11973	c. CITY	
		d. STATE	e. ZIP CODE		
6. The prime contract <input checked="" type="checkbox"/> does, <input type="checkbox"/> does not contain the clause entitled "Contract Work Hours and Safety Standards Act -- Overtime Compensation."					

7. The prime contractor states that under the contract shown in Item 1, a subcontract was awarded on the date shown in Item 2 to the subcontractor identified in item 5 by the following firm:

a. NAME OF AWARDING FIRM Brookhaven Science Associates, L.L.C.	
b. DESCRIPTION OF WORK BY SUBCONTRACTOR Construction of the Ring Building for the National Synchrotron Light Source II.	

8. PROJECT National Synchrotron Light Source Ring Building		9. LOCATION Upton, NY 11973	
10a. NAME OF PERSON SIGNING David J. Pavaglio		11. BY (Signature)	
10b. TITLE OF PERSON SIGNING Contracts Administrator			
12. DATE SIGNED			

PART II - ACKNOWLEDGMENT OF SUBCONTRACTOR

13. The subcontractor acknowledges that the following clauses of the contract shown in Item 1 are included in this subcontract:

Contract Work Hours and Safety Standards Act - Overtime Compensation - (If included in prime contract see Block 6)	Davis-Bacon Act
Payrolls and Basic Records	Apprentices and Trainees
Withholding of Funds	Compliance with Copeland Act Requirements
Disputes Concerning Labor Standards	Subcontracts (Labor Standards)
Compliance with Davis-Bacon and Related Act Regulations	Contract Termination - Debarment
	Certification of Eligibility

14. NAME(S) OF ANY INTERMEDIATE SUBCONTRACTORS, IF ANY

A		C	
B		D	
15a. NAME OF PERSON SIGNING		16. BY (Signature)	
15b. TITLE OF PERSON SIGNING			
17. DATE SIGNED			

Page Intentionally Left Blank

Enclosure 5 – Instruction for obtaining NSLS-II Plans and Specifications

Page Intentionally Left Blank

BlueprintOnline.com

Registration

1. Register at <http://www.BlueprintOnline.com>. Registration is free. You must be a registered user to order construction documents online.
 - a. Click the orange Register button.
 - b. Fill-out all required fields that are marked with '*'.
2. After successfully registering with BlueprintOnline, you can login to the Web site.

Contact support@Blueprintonline.com with questions regarding access.

Navigation

1. After successfully signing-in, you will see a Public Jobs folder in the left column. The National Synchrotron Light Source II will be listed under "Brookhaven National Laboratory"
2. Follow the instructions below to view the project. All navigation occurs in the left column.
 - a. Click on the blue folder to the left of the project owner's name.
 - b. Click on the NSLS 2 Request for Proposal.
 - d. Click on the plans and specifications folder to view disciplines or divisions.
 - e. You can view drawings by clicking on the drawing name when entering a discipline.

Ordering

1. Once you have entered the project you can order CDs, entire sets, disciplines or individual sheets.
2. Click in the box to the left of the described volume, discipline or drawing name to place a check next to what you want to order.
3. Click the Add to Cart or Check Out button at the bottom left-hand corner of the screen.

Page Intentionally Left Blank

Enclosure 6 – NSLS-II Proposal Pricing Sheets

Page Intentionally Left Blank

NATIONAL SYNCHROTRON LIGHT SOURCE II RING BUILDING

Division

01 - General requirements	\$ _____
02 - Site construction	\$ _____
03 - Concrete	\$ _____
04 - Masonry	\$ _____
05 - Metals	\$ _____
06 - Wood & Plastics	\$ _____
07 - Building protection	\$ _____
08 - Doors & Windows	\$ _____
09 - Finishes	\$ _____
10 - Specialties	\$ _____
11 - Equipment	\$ _____
12 - Furnishings	\$ _____
13 - Special construction	\$ _____
14 - Conveying systems	\$ _____
15 - Mechanical system	
a. Controls	\$ _____
b. HVAC	\$ _____
c. Plumbing	\$ _____
d. Fire protection	\$ _____
e. Process piping and equipment	\$ _____
f. Site utilities	\$ _____
g. Other	\$ _____
16 - Electrical systems	
a. Lighting, conduit and wire	\$ _____
b. Power distribution, conduit and wire	\$ _____
c. Fire alarm, conduit and wire	\$ _____
d. Communication and security, conduit and wire	\$ _____
e. Site electrical utilities	\$ _____
e. Other	\$ _____
TOTAL Ring Building Price	\$ _____

NATIONAL SYNCHROTRON LIGHT SOURCE II RING BUILDING

OPTION PRICING

<u>OPTION</u>	<u>PRICE</u>
Option No. 1 - Provide Bypass Corridor between Cols A2 and A16 (LOBs 1, 2)	\$ _____
Option No. 2 - Provide Second 15kv Feeder- Substation 2 to Bldg 603 (Redundant Feeder)	\$ _____
Option No. 3 - Provide 30 Tunnel Wall Shield Doors	\$ _____
Option No. 4 - Provide Ln2 & Gn2 Piping and Electrical Utilities (Beamline Utilities)	\$ _____
Option No. 5 - Provide Four-Foot High Clerestory Windows	\$ _____
Option No. 6 - Provide Bypass Corridor between Cols A26 and A40 (LOB 2, 3)	\$ _____
Option No. 7 - Provide Bypass Corridor between Cols A50 and A64 (LOB 3, 4)	\$ _____
Option No. 8 - Provide Acoustical Metal Roof Panels	\$ _____
Option No. 9 - Provide Acoustic Wall Panels - 80 Locations	\$ _____
Option No. 10 - Provide Building Siding Enclosure at LOBs 1, 4, and 5	\$ _____