

DIVISION 00 – BIDDING AND CONTRACT REQUIREMENTSSECTION 000800 – SUPPLEMENTARY CONDITIONS

**This clause is to be used for all projects that are being measured in the Performance Matrix System as well as any others considered to be time critical. If only a portion of the project is critical, add a Clause C defining that portion only.**

SC-1. TIME IS OF THE ESSENCE

- A. This project is to be considered as one where "time is of the essence". The contract completion date shall be adhered to. Failure to be "substantially complete" by the completion date established in the signed contract will be considered by BNL as being non-responsive and could lead to the barring of the Contractor from bidding future projects at BNL for a period of one (1) year.
- B. Substantial Completion is the stage in the progress of the Work when the Work or a designated portion thereof is sufficiently complete, as determined by MPO in accordance with the Contract Documents, so as to be able to be occupied or utilized for its intended use.

SC-2. SHOP DRAWINGS, MANUFACTURERS DATA, AND SAMPLES

- A. The term "shop drawings and data" includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, similar materials and samples furnished by Contractor to explain and show in detail, specific portions of work required by Contract.
- B. Shop drawings and data for construction shall be submitted with such promptness as to cause no delay in the work. Allow sufficient time for checking, correcting, resubmitting and rechecking. Submittals to BNL by Contractor, subcontractor, or any low tier subcontractor, pursuant to a construction contract, shall show in detail (i) the proposed fabrication and assembly of structural elements and (ii) the installation (i.e., layout, form, fit, setting, and attachment details) of materials or equipment. BNL may duplicate, use, and disclose in any manner and for any purpose shop drawings and data delivered under this Contract.
- C. These contract conditions shall be included in all subcontracts hereunder at any tier.
- D. Before submitting any data for approval, the Contractor shall coordinate all such drawings and data, and check them for accuracy, completeness, and compliance with Contract requirements. The Contractor shall see that all work contiguous with and having bearing on the work indicated on drawings is accurately and distinctly illustrated and that work shown is in conformity with contract requirements.

- E. The Contractor shall indicate his approval on all submittals as evidence of the above coordination and review. Shop drawings and data submitted to BNL without evidence of Contractor's approval, may be returned for resubmission.
- F. Shop drawings shall be numbered consecutively and shall represent:
  - 1. All working and erection dimensions.
  - 2. Arrangement and sectional views.
  - 3. Necessary details, including information for making connections to other work.
  - 4. Kinds of materials and finishes.
- G. Shop drawings shall be dated, and shall contain:
  - 1. Name and Number of project.
  - 2. Description of required equipment, materials, and classification item numbers.
  - 3. Locations at which materials or equipment are to be installed in the work.
  - 4. Identification of drawings and specification sections to which they apply.
- H. BNL's technical liaison will indicate its review action on shop drawings and data and, if rejected as submitted, shall indicate its reasons therefor. No work shall be done on an item or system, including fabrication, prior to MPO taking no exception. Taking no exception by BNL shall not relieve Contractor from responsibility for any errors or omissions in such drawings and data, nor from responsibility for complying with requirements of this Contract, except with respect to variations described and approved in accordance with (I) below.
- I. If shop drawings and data show variations from Contract requirements, Contractor shall describe such variations in writing separate from drawings and data at the time of submission. If BNL approves any such variation(s), it shall issue an appropriate Contract modification, except that, if variation is minor and does not involve a change in price or in time of performance, a modification need not be issued.
- J. Submission of data for approval shall be accompanied by letter of transmittal, in duplicate, containing the name of the project, Contractor's name, number of drawings, titles and other pertinent data.
- K. Submit Shop Drawings on Ozalid copies of original Contractor's Drawings. Submit five (5) sets of Ozalid prints for each submission until approved.
- L. Submit opaque manufacturer's cuts and data sheets clearly marking all applicable data. Submit five (5) copies for each submission until approved.

- M. Submit samples, tagged and labeled and with a 3" x 4" space for approval stamp. Submit two (2) samples for each submission.
- N. The General Conditions portion of the Contractors monthly payment requisitions may be reduced if required Shop Drawings, Manufacturers Data, Samples and any other required submissions are not received, or until they are received in a timely manner.
- O. Except for required submissions specified below, submit Shop Drawings, Manufacturers Data, and Samples only for items where a substitution is requested. Refer to GC-21, Substitutions.
- P. Address all submissions to:

Brookhaven National Laboratory  
 \_\_\_\_\_, Manager  
 Building 134-C  
 Upton, New York 11973

- Q. Mark all submission transmittals as follows:

JOB TITLE: \_\_\_\_\_  
 JOB NO. \_\_\_\_\_, BLDG. NO. \_\_\_\_\_

**Indicate by inserting "X" under each requirement. Delete Items 2, 6, 9, 10 and/or 11 only if not required for this project.**

- R. Required Submissions:

Item	Shop Dwg.	Mfrs. Data	Samples	Other Data
* 1. Schedule of Values				X
* 2. Unit Prices				X
* 3. List of Subcontractors with Completed ISM Flowdown Forms				X
4. Construction Safety Plan				X
5. Occupational Medicine Program				X
6. Rigging Plan				X
7. Recycled Materials Reports				X
8. Certification of Specification Compliance				X
9. Preventative Maintenance Program Data				X
10. Operation and Maintenance Data				X
11. LEED Certification Requirements				X
12.				

- S. MPO reserves right to request additional data.
- T. Critical Items:
  - 1. Submit items marked with an asterisk within four (4) weeks after signed Contract.
  - 2. No later than two (2) weeks after receiving approval, submit copies of purchase orders and vouchers showing final purchase agreement and promised delivery date.

SC-3. BNL SUPPLIED ITEMS

- A. Items supplied by BNL:
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
- B. Shop Drawings and Manufacturer's Data will be available at MPO.
- C. Check all items in presence of MPO Construction Representative to insure they are complete with all parts and appurtenances, and free from damage. Move items from point of storage on BNL Site and completely install and connect at Site. Handle all items with care.

**Delete the items not required based upon scope of project.**

SC-4. TEMPORARY WORK

- A. All methods, materials, and schedules for installation, operation, maintenance, and removal of all temporary work shall be approved. Upon removal, restore all property to original condition as approved.
- B. Telephone: BNL will not provide telephones. Contact F&O Business Operations Office within five (5) working days after notice to proceed and arrange for a temporary telephone to be installed.
- C. Field Office: BNL will not provide building office space. Within five (5) working days after notice to proceed, provide, where directed, an approved Field Office with lighting. Provide heat, when temperature drops below 60°F.
- D. Toilet Facilities: BNL will not provide toilet facilities. Provide, where directed, and properly maintain, portable toilet facilities, as approved, from start to finish of operations.

- E. Fire Extinguishers: One (1) portable tank type fire extinguisher containing fifteen pounds of liquid carbon dioxide, complete with hanger, seat type valve, 3 feet of hose and non-shatterable discharge hose, complete with brackets for wall mounting; as manufactured by Walter Kiddie & Co., Model 15KS, or equal.
- F. First Aid Kit: One (1) industrial first aid kit as manufactured by Acme Products, Kit Number 25, or equal, located where directed by MPO.
- G. Closures: Install temporary, weathertight closures over exterior openings immediately after openings are created.
- H. Partitions: Provide, where indicated on Drawings, temporary, dust-tight partitions, complete with all doors, constructed of noncombustible materials with all joints and edges taped.
- I. Storage Facilities: BNL will not provide storage space. Provide, where directed, an approved storage facility.
- J. Fences: Erect four (4) foot high lath and wire temporary fencing, where indicated on Drawings, before start of other work.
- K. Existing Roofing: Protect existing roofing with plywood or other approved material. Confine workmen and material to protected area.
- L. Existing Flooring: Protect existing flooring with plywood or other approved material. Confine workmen and material to protected area.
- M. Ventilation:
  - 1. Provide ventilation in accordance with codes specified and as approved.
  - 2. Conform to standards of the American Conference of Governmental Industrial Hygienists Threshold Limit Values and Occupational Safety and Health Administration Standards for permissible exposure limits.
- N. Showers:
  - 1. Provide a shower trailer in accordance with codes specified and as approved. Locate where directed by MPO.
- O. Heating:
  - 1. Provide heating in accordance with codes specified and as approved by BNL.
  - 2. Maintain proper temperatures for storage and installation of all materials as recommended by material manufacturers' published instructions and as directed by BNL.

3. Provide systems approved for unattended operation. Conform to requirements of NFPA 31, 89M, 211, 54, and OSHA Part 1926.154. All components of temporary systems shall be UL, FM, and AGA approved.
4. Maintain proper ventilation for health and safety of personnel.
5. Use of resistance heating to provide temporary heat will not be permitted.

**Do not use following, "Painting," when painting section is included in the technical specifications.**

SC-5. PAINTING

- A. Prepare and paint existing surfaces marred during construction and new surfaces with one (1) prime coat and two (2) finish coats matching surrounding areas. Comply with latest revisions of OSHA 29 CFR 1926, BNL Standards-Based Management System; ES&H Standards, 6NYCRR Parts 205 & 228, and UL standards and regulations.

**Use the following, "Special Cleaning," only where such is necessary. Normal cleaning is covered in the general conditions.**

SC-6. SPECIAL CLEANING

- A. Use extreme care to prevent infiltration and spreading of dust, dirt, fumes, and other foreign matter within the \_\_\_\_\_.
- B. Remove dust promptly with vacuum cleaners and other approved means. Place all debris in approved covered containers. Empty containers outside building, where directed, at least once a day.

**Use the following, "Power and Light," only when directed by the electrical group.**

SC-7. POWER AND LIGHT

- A. BNL will provide a source for temporary power for the Contractor's tools and lighting. Refer to GC-29, Temporary Services.
- B. Power will be \_\_\_\_\_ amp, \_\_\_\_\_ volt, \_\_\_\_\_ phase complete with wire, GFI and \_\_\_\_\_ duplex receptacle(s).

SC-8. SAFETY REQUIREMENTS

- A. All Contractor and Subcontractor employees are required to attend BNL's Contractor/Vendor Orientation Training (see GC-14).
- B. All Contractor and Subcontractor employees who work on or near energized parts as defined in NFPA 70E shall complete the Electrical Safety 1 Training Course. The course is available on the Web at <http://training.bnl.gov/course/elecsaf1>, and is valid for one (1)

year. In addition to completing this course, each organization's Electrical Work Supervisor must discuss the "Standard for Electrical Safety in the Workplace" (NFPA 70E) requirements and specific hazard(s) and risk information with their staff. This job briefing should discuss specific electrical work procedures, protective equipment requirements, and departmental contacts at the local application level. This job level discussion can be informal; however, a record of this briefing shall be documented. All Contractor and Subcontractor employees that "Work On or Near" electrical circuits shall have taken and passed a CPR training program that has been approved by BNL.

- C. MPO will arrange and ESH&Q Division will provide additional safety instructions, as required. All personnel shall conform to special requirements for wearing TLD's, personal protective equipment, protective clothing, respirators, and other safety measures as required. TLD's, only, will be provided by BNL at no charge, unless otherwise specified.

**Include the following clause where industrial hygiene (IH) monitoring is required by the BNL SBMS Subject Areas, as indicated in the ES&H 500A form. Projects that involve work with the conditions listed, during the construction phase, require IH monitoring.**

SC-9. INDUSTRIAL HYGIENE MONITORING

- A. All work on this Project with regard to, and of, the conditions listed must be done within the occupational exposure limits for Industrial Hygiene hazards set in OSHA 29CFR1926, 29CFR1910, and ACGIH *Threshold Limit Values*® (see Attachment A, Article 43(e), 02/17/09, to Contract). Compliance with the OSHA Permissible Exposure Limits and American Conference of Governmental Industrial Hygienists (ACGIH) *Threshold Limit Values*® shall be determined by representative personnel exposure monitoring and dosimetry conducted by the Contractor and his Industrial Hygienist. Monitoring shall be continuously performed during the total duration of the hazardous condition. The details of the project's exposure monitoring equipment, methods, and monitoring strategy shall be included in the Contractor's Environmental, Health and Safety Plan. Conditions that require industrial hygiene monitoring include, but are not limited to:

1. Asbestos
2. Beryllium
3. Working with Chemicals, Adhesives, or Lead
4. Release of Silica (grinding, drilling, core boring, jackhammering of concrete, masonry, mortar, etc.)
5. Confined Spaces
6. Heat Stress
7. Carcinogens
8. Noise and Hearing Conditions
9. RF/Microwave/Non-Ionizing Radiation
10. Static Magnetic Fields

- B. The Contractor is required to provide qualified monitoring and hazard assessment personnel (per DOE G440.1-3 *Occupational Exposure Assessment*) to conduct all Industrial Hygiene monitoring.
- C. The Contractor is required to conduct monitoring with calibrated equipment using NIOSH or OSHA approved methods, and to have analysis conducted by an American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing certified laboratory or by National Institute of Standards and Technology (NIST) traceable calibrated direct reading instrumentation. All instrumentation used for surveys shall have been calibrated in compliance with the manufacturer's specification prior to use in the field.
- D. Copies of all equipment calibration, field sampling sheets, laboratory analysis reports, and hazard assessment evaluation reports are to be provided to MPO, in accordance with the Shop Drawings, Manufacturers Data, and Samples Section above.

**Include this clause for all contracts that require field welding of steel, aluminum, decking, metal fabrications, and/or piping.**

SC-10. WELDING INSPECTIONS

- A. Radiographic examination of welds shall not be performed by the Contractor.
- B. BNL reserves the right to perform radiographic (x-ray) welding inspections on any welds performed by the Contractor under this contract that appear, after visual inspection, not to comply with the Specifications.

**Generally, projects designed by MPO Group are not required to be LEED (Leadership in Energy & Environmental Design) certified. The CFN was the first at BNL. Should this project be determined to require LEED certification, include the following clause in this Section. Each of the individual Specification Sections must also be edited and revised to include the LEED requirements.**

SC-11. LEED CERTIFICATION

- A. This project is to be LEED certified. Refer to Section 018113 – Sustainable Design (LEED) Requirements, for type, required submittals, credits, options and other specifics that will allow this project to be certified.

**If work is to be performed in the wildland areas, in spring, summer, and/or fall, include this condition. Be sure to retain this clause if project is located in wooded areas.**

SC-12. WILDFIRE DANGER

- A. This 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.
- B. 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.

- C. 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.

**Contact ESHD Safety Representative to determine radiological training requirements. If GERT is required, use Clause A. If Rad Worker I (RWT-002) is required, use Clause B instead of A. If Contamination Worker (RWT-300) is required, use Clause C instead of A and B. Modify each clause as recommended by the ESHD Safety Representative.**

SC-13. CONTRACTOR RADIOLOGICAL TRAINING

- A. All workers that may enter a controlled area on the BNL Site are required to wear a thermoluminescent dosimeter (TLD). In order to receive a TLD, at a minimum workers must complete General Employee Radiological Training (GERT). GERT is available as a Web-based course at <http://training.bnl.gov> and takes approximately one (1) hour to complete.
- B. All workers that may enter a radiological area are required to wear a TLD and have completed Rad Worker I training. Radworker I (RWT-002) consists of two parts: a Web-based course (TQ-RW1-Part 1) available at <http://training.bnl.gov> and a classroom course (TQ-RW1-Part 2) given Tuesdays 9:00–11:30 am in Bldg. 703. Contact M. Manning at 344-7958 for scheduling.
- C. All workers that may be performing work in radiological areas that have loose contamination or may generate loose contamination must wear a TLD and complete Contamination Worker training (RWT-300/300A). The course is given every other Wednesday and runs from 9:00–12:00 and 1:00–2:30. Call M. Manning at 344-7958 to make an appointment and determine location. All workers taking RWT-300/300A must also receive a Whole Body Count prior to performing work and at the completion (closeout) of work (or each year as a minimum). The \$500 cost for each whole body dosimetry will be paid by BNL for the initial complement of workers; however, the Contractor will be responsible for this cost for any replacement workers. Closeout dosimetry must be performed.

**If work is to be performed within Collider-Accelerator controlled areas, buildings and/or facilities, include this condition and do not include SC-13 above.**

**Include the numbers of the C-A facilities that are to be entered.**

SC-14. COLLIDER-ACCELERATOR USER & GENERAL EMPLOYEES RADIOLOGICAL TRAINING

- A. All Contractor and Subcontractor employees are required to attend the C-A User & BNL General Employees Radiological Training Course (GERT) and be approved by BNL to obtain and wear a Thermoluminescent Dosimeter (TLD) in order to work on the site.

- B. The combination course is a 2 hour course, given every Monday at 1:00 p.m. at Bldg. 911, for employees who may routinely enter, or need to gain unescorted access to, Collider-Accelerator buildings and C-A Controlled Areas. Completion of this course qualifies an individual to receive personnel dosimetry and enter Controlled Areas, outside of posted radiological areas, and Buildings \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, without a trained escort.

SC-15. SECURITY ACCESS AND ESCORT REQUIREMENTS

**Security Escort Required – Use Paragraphs A, B, C & D for work in the following areas (contact user to provide security escorts):**

- Bldg. 50, 491, 449 and 938 (Entire Bldg.)**
- Bldg. 701 (143' Level)**
- Bldgs. 197 (TSO Area)**
- Bldgs. 750 (Equipment & Operations Levels, Filter Room, Transformer Room)**
- Bldg. 801 Counter Intelligence Area**

- A. All Contractor and Subcontractor personnel shall be United States citizens. Persons working on this project will be subject to citizenship verification by BNL Security personnel.
- B. Contractor personnel will not be allowed in the following security areas without a BNL escort:
  - 1. \_\_\_\_\_
  - 2. \_\_\_\_\_
- C. Notify MPO three (3) working days in advance of all access required in these areas.
- D. Contractor personnel shall meet escort at designated time in \_\_\_\_\_.

SC-16. PROCEDURES WITHIN COMPUTER AREA

- A. The computer area is \_\_\_\_\_ including space below raised floor system.
- B. Workmen shall be supervised by an approved Contractor's or Subcontractor's representative at all times and shall not enter areas other than where work is required.
- C. Minimize infiltration and spreading of dust, dirt, fumes and other foreign matter as approved. Prefabricate, premix, and otherwise prepare dust and dirt producing materials outside of building where directed.
- D. When a dust producing operation in the computer area cannot be avoided, remove all dust and dirt as it is created with an approved heavy-duty commercial vacuum cleaner. Under floor areas normally have smoke detection fire alarm service. Notify MPO 48 hours in advance of dust producing operations to minimize the chance of false alarms.
- E. Keep computer area clear of all rubbish. Place debris in approved covered containers and empty outside of building, where directed, at least once a day.

- F. Use extreme care at all times to protect all computer equipment. Do not place tools, materials, and other items on or against equipment.
- G. Limit the total number of floor panels removed at one time, as directed. Barricade resulting floor openings.
- H. Immediately remove from computer area, all tools, equipment and materials not in use. All work setups, such as ladders and floor openings, which obstruct operational passages to computer equipment shall not be left overnight unless specifically approved.
- I. Smoking is not permitted in computer area.
- J. Any workman not conforming to BNL procedures will be directed to leave the building. BNL shall not be responsible for resulting expense.
- K. There may be several Contractors working in the computer area doing work that is not included in this Contract. Coordinate and schedule all work in this Contract with MPO and cooperate with other Contractors to insure uninterrupted computer operation, an orderly work procedure, and a minimum number of workmen in the area at one time.

SC-17. SPECIAL SERVICE INTERRUPTIONS

- A. Refer to heading "SERVICE INTERRUPTIONS" in General Conditions.
- B. Service interruptions may occur only when permitted during scheduled shutdowns.
- C. Scheduled shutdowns normally occur \_\_\_\_\_.
- D. Notify MPO two (2) weeks in advance of all proposed service interruption unless otherwise specified or directed.
- E. All materials, prefabricated where directed, and labor must be on Site before a shutdown will be permitted.
- F. Increase labor force, use overtime or both, as directed, to insure completion of work in specified time. Include all overtime costs required to complete installation.
- G. Work requiring a power shutdown, must be completely installed, tested, and ready for use in a period not to exceed time specified by MPO.

SC-18. PENETRATIONS

- A. Seal all penetrations through fire rated systems with an approved fire and/or smoke stop material, Hilti North America Fire Stopping Systems, or equal as approved by MPO, capable of maintaining the level of fire protection of the wall, partition, floor or ceiling penetrated.
  - 1. Systems selected shall be appropriate for the joint and/or penetration involved, such as floor to floor, wall to wall, floor to wall, head of wall, and whether there is movement or no movement capability.

**Do not use building cranes unless approved by users and there is a substantial cost benefit to the Lab. If so, revise the following to reflect the specific conditions.**

SC-19. BUILDING CRANE USE

- A. The existing building crane may be used by the Contractor as approved. Coordinate and schedule its use with MPO.
- B. Assume full responsibility for its use and repair all damage resulting from its use.
- C. Only trained personnel will be permitted to operate crane. Arrange for training through MPO. Training normally takes from one to two hours.

SC-20. SURVEYS AND STAKEOUT

- A. MPO will establish base lines and bench marks at the site. The Contractor shall establish reference control points and complete the layout of the work to be performed under the Contract.
- B. In addition, MPO will mark and/or stake out all known underground utility locations. Locations are approximate. Contractor shall maintain the markings/stakeouts. Any excavating near these locations shall be by hand to locate utilities exactly.
- C. The Contractor is responsible for all measurements required for execution of the work as specified, as shown on the drawings, or as modified at the direction of MPO.
- D. If, for any reason, bench marks, monuments, and/or utility location markings, established by the Contractor or MPO, are disturbed, the Contractor is responsible to re-establish them, without cost to BNL, as directed by MPO. Work may be suspended at any time when location and limit marks are not reasonably adequate to permit checking the work.

**Construction safety must be included on all construction contracts.**

SC-21. CONSTRUCTION SAFETY

- A. The Contractor is solely responsible for Construction Safety for the duration of this Contract. He shall prepare and submit a Construction Safety Plan within two (2) weeks of the Contract signing and before the commencement of any work on site. A Safety Plan Outline with an Occupational Medicine Program example is available from MPO and copies will be handed out at the Pre-Bid meeting. This plan will be reviewed and approved by the MPO and the ESH&Q Division and shall include the following:
  - 1. Specific assignment of an individual, employed by the Contractor and named in the Plan, as well as one (1) alternate, as Safety Representative, who will be responsible for job site construction safety. A Multi-Discipline Contractor must demonstrate, with verification of completion of the “30-Hour OSHA Compliance for the Construction Industry” construction safety courses, familiarity with 29 CFR 1926,

etc., the ability of the Safety Representatives to supervise the type of work for which they will be responsible. A Single-Discipline Contractor needs to complete the "10-Hour OSHA" course to demonstrate their ability. Sources for training can be obtained from MPO. A Safety Representative shall be on the Project Site whenever construction activities are being performed.

2. A letter or certificate of compliance indicating that the Contractor is aware of, and has reviewed, and will comply with the safety regulations of the OSHA Standards (29 CFR 1926/1910), Standard for Electrical Safety in the Workplace (NFPA 70E), Modernization Project Office's ES&H Procedures, and BNL Standards-Based Management System (<https://sbms.bnl.gov>).
3. A copy of the company record of past injury, accident, fire and property damage experience, including motor vehicle, for previous two (2) years. In lieu of this data, contractor may submit the previous two (2) years industrial insurance experience modifiers or rates.
4. A descriptive outline of the Contractor's safety program indicating:
  - a. Provisions for emergency aid.
  - b. Specific identification of "Competent Person" (per OSHA), his/her qualifications, including, but not limited to, Construction Safety Awareness courses taken, applicable to the nature of this Project, and where applicable, the method of accomplishment in a specific excavation plan. Competent Person must have had formal training, have knowledge of existing standards, and have authority to take actions deemed necessary.
  - c. A comprehensive occupational medicine program (see Attachment A, Article 43(e), 02/17/09, to Contract), under the direction and control of an occupational medicine physician, that provides these services in full compliance with all provisions of Section 8 ("Occupational Medicine") of Appendix A of the Federal Regulations 10 CFR 851 ("the Rule"), including the following provisions:
    - 1) plans and implements the occupational services,
    - 2) is, or is under the direction of, a physician licensed in the state of New York,
    - 3) is staffed by health care professionals with valid New York State licenses in their respective professions,
    - 4) determines the content of the worker health evaluations in accordance with current sound and acceptable medical practices and all pertinent statutory and regulatory requirements.
  - d. A program for training employees in the recognitions and avoidance of unsafe conditions and in the safety regulations applicable to this project. The construction contractor shall conduct informal "tool box" safety and health training sessions at least weekly for all employees on the worksite. Depending

on the size and nature of the project, this may be accomplished in single or multiple sessions and may address different topics for different work crews. Outlines of all "tool box" training sessions shall be prepared by the construction contractor and annotated with the date, time, and names of all employees in attendance.

- e. A program certifying that all service, maintenance, and/or construction of electrical equipment is performed in strict compliance with NFPA 70E. All Contractors and service providers must be trained in NFPA 70E and wear the appropriate PPE. See GC-14 for Contractor training requirements.
- f. A program certifying that all temporary staging, platforms, scaffolding, planking, bracing, scaffold towers and walkway work is to be designed, erected, used and maintained, and dismantled in accordance with OSHA 29 CFR 1926, BNL SBMS and Modernization Project Office ES&H-802. The Contractor's Competent Person shall have been formally OSHA-trained in scaffolds standards and safety and shall assure that all personnel engaged in the erection and/or dismantling of scaffolding have been OSHA-trained in the proper scaffold procedures and precautions. The Contractor's Competent Person shall also assure, through Tool Box training at the Site, that all personnel working on or from the scaffolds have been trained in the proper procedures and precautions while using the scaffolding.
- g. A program to provide for the frequent and regular inspection and reporting of job site conditions relating to safety.
- h. A program certifying the safe operating condition and assuring the proper maintenance of earth moving equipment, cranes, vehicles and other such equipment, including an environmental protection spill prevention plan. A Rigging Plan shall be submitted in accordance with the conditions noted in the Supplementary Conditions clause, "SHOP DRAWINGS, MANUFACTURERS DATA, AND SAMPLES", above, whenever this equipment is to be used on Site.
- i. A program certifying the safe operating condition and assuring the proper maintenance of permanent and/or temporary light, power and electrical equipment, including protective devices (GFCI) for portable electric tools.
- j. Provisions through meetings, established contacts or other means, for the mutual exchange of information with contractor and subcontractor personnel on:
  - Changes in scope of work
  - Recognized hazards
  - Identified inspection deficiencies
  - Future phases of work
  - Potential problem areas
  - Coordination of crafts

- k. Upon approval of the Safety Plan by ESH&Q, the Contractor shall make any revisions noted and resubmit five (5) copies of the Plan to MPO for distribution.
- B. All workers shall be able to comprehend the scope of work and safety instructions required to perform the job. All workers employed by the Contractor and the Sub-Contractor shall acknowledge, in writing, that they have read and understood the Project Safety Plan. If workers cannot read or speak English or are hearing impaired, an interpreter shall be provided by the contractor to ensure that the scope of work, information regarding hazards associated with the work-site, and safety requirements are relayed to them in a manner in which they can understand. The interpreter shall sign that he has explained the plan, and shall be at the work-site whenever these workers are on the job. The approved Safety Plan shall be available at the job site to all Contractor and Sub-Contractor employees.
  - C. When Confined Space Entry is required, the Contractor shall have a written Confined Space Entry Program which complies with OSHA and BNL Standards-Based Management System (<https://sbms.bnl.gov>).
    1. The program will require the Competent Person (as defined by OSHA) to:
      - a. Establish procedures and practices for safe entry.
      - b. 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).
      - c. Test and monitor conditions to identify and evaluate hazards.
      - d. Prevent unauthorized entry.
      - e. Station an attendant outside permit spaces during entry.
      - f. Post procedures to summon rescuers and prevent unauthorized personnel from attempting rescue.
      - g. Develop a system for preparing, issuing, using, and canceling entry permits.
    2. Permits are required to 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.
    3. Authorized entrants into confined spaces must be trained to be aware of any hazards they may face and be able to recognize signs and symptoms of exposure. They must also be familiar with any emergency equipment in the confined space.

- D. Lock-Out/Tag-Out is the required method of control when performing service, maintenance, or construction around any machinery where personnel could be injured by startup of the equipment or release of stored energy. A Lock-Out/Tag-Out program shall be included in the Construction Safety Plan that complies with OSHA and is tailored to BNL's LOTO program. Sources of energy shall be, but not limited to, mechanical (kinetic/potential), electrical, electromagnetic, chemical, thermal, hydraulic, and pneumatic. Contractor shall provide his own locks (types specified by BNL), lockout devices, and red tags for Lock-Out/Tag-Out of energy sources(s). A logbook shall also be maintained and kept in a designated area assigned by BNL.
1. 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 BNL Procedure MPO-ESH-102 Electrical Safety.
  2. 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).
  3. BNL shall have the ability to request the Contractor to provide the appropriate documentation, which will clearly indicate the qualifications and training of any and/or all employees performing such work.
  4. Contractor will arrange for the issuance of a "Working On or Near" Permit as required by the above stated Policy and MPO-ESH-102 Electrical Safety. The Contractor shall give BNL a minimum of 48 hours 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.

- E. Concrete and/or Masonry Penetrations are of specific safety concern at BNL. It is BNL policy that the Contractor ensure safe penetration into or through any existing concrete or masonry surface.
1. BNL Standards-Based Management System, ES&H Standards and Modernization Project Office Policies and Procedures shall be followed, including the completion of appropriate Penetration Permits and the provision and use of utility locating/detecting equipment.
  2. In order to comply with these guides, the Contractor shall provide trained "Authorized Employees" and shall submit, for MPO 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.
  3. Non-aggressive penetrations cannot be executed without first using utility locating/detecting equipment and obtaining approval by MPO.
  4. Aggressive penetrations cannot be executed without first using utility locating/detecting equipment followed by the completion and approval of a MPO Aggressive Penetration Permit.
- F. The Contractor shall be required to include the applicable safety requirements in all contracts with all tiers of subcontractors.
- G. Prior to the start of construction, a pre-construction meeting shall be scheduled with the outside contractor to review specific safety requirements of the project.
- H. No work at the Site will be permitted to proceed and no payment requisitions will be authorized until the Construction Safety Plan is submitted and approved. Contractor shall proceed, however, with ordering of equipment and materials upon Contract signing, as specified in Section "Shop Drawings, Manufacturers Data, and Samples."
- I. BNL will not tolerate non-adherence to safety requirements under this Contract. These requirements shall include, but not be limited to, all applicable OSHA Safety requirements, the BNL Standards-Based Management System; ES&H Standards, all applicable codes and regulations, and the approved Safety Plan. Failure to comply will result in BNL's direction to stop work in accordance with Article 30 of Attachment A, General Provisions. Non-compliance could also mean the barring of the violating individuals from the BNL Site. Repeated safety violations may also result in a permanent Work Stoppage under Attachment A, 02/17/09, Article 32, Suspension of Work.

SC-22. CRANES, TRUCKS, MATERIAL HANDLING, AND LIFTING EQUIPMENT

- A. Contractor shall notify MPO 48 hours prior to any earthwork and/or rigging operations. All cranes, boom trucks, and lifting equipment must be approved by MPO prior to use. No equipment operations will be allowed until approval of equipment has been granted. Contact the MPO Hoist and Rigging Inspector, (631) 344-5456, for equipment inspections.
- B. All heavy equipment, including cranes and earth-working equipment must be in compliance with OSHA, ANSI, and DOT requirements, must be in good repair, and is subject to inspection by BNL. Equipment found to be leaking oil or other fluids will not be permitted to operate at BNL.
- C. BNL has several areas throughout the complex where overhead clearance is a concern. Contractor shall disclose overall dimensions of any heavy equipment prior to being brought on BNL site. Contractor and BNL shall walkdown the entire route/path that heavy equipment will use to ensure there are no interferences with overhead lines or other height restricted areas. Any modifications to the agreed upon route/path shall be approved by BNL prior to moving heavy equipment.

SC-23. SCHEDULE OF VALUES

**Use this clause to establish the desired breakdown of the contractors lump sum price.**

- A. Successful bidder shall submit no later than 2 weeks after contract signing the following Schedule of Values breakdown. Separate the Construction Safety costs from the cost figure for General and Special Conditions, and list separately:

**Breakdown by spec section or items of work.**

- 1. General and Special Conditions
- 2. Bond
- 3. Occupational Medicine Program
- 4. Construction Safety
- 5.
- 6.
- 7.
- 8.

SC-24. UNIT PRICES

Use this clause to obtain unit cost breakdowns from Contractor to expand MPO estimating data base, to establish order of magnitude costs for change orders and to reconcile cost estimate prepared for this project.

- A. Successful bidder shall submit no later than 2 weeks after contract signing the following unit price breakdown.
- B. Unit prices to be used as the basis for changing quantities of work items from those indicated by the contract documents. Upon written instruction from PPM and MPO, the following unit prices shall prevail:

Insert work items specified in technical sections with appropriate units of measure that are to be priced.

	Work Added	Work Deleted
1. _____ per cubic yard.	\$ _____	\$ _____
2. _____ per linear foot.	\$ _____	\$ _____
3. _____ per square foot.	\$ _____	\$ _____
4. _____ per ton.	\$ _____	\$ _____
5. _____ per unit.	\$ _____	\$ _____

SC-25. SPILLS OF HAZARDOUS MATERIALS

- A. When the work requires the Contractor to bring temporary fuel storage facilities on to the BNL Site, the Contractor shall be responsible for providing a temporary impermeable containment area for all fuel transfer operations in accordance with Suffolk County Department of Health Services, Article 12.
- B. If, during construction activities, a release, discharge, or spill of petroleum products or chemicals occurs, the Contractor shall:
  - 1. Immediately notify Safeguards and Security at ext. 2222 (or 911) from Site telephones or 631-344-2222 from cell phones, and MPO, of the release, discharge, or spill.
  - 2. Immediately, per SBMS, initiate cleanup and disposal operations by a BNL approved hazardous waste management contractor, complete the operations, and be responsible for monitoring and/or sampling in the event of a spill, to the satisfaction of BNL.

OR

3. Request MPO to initiate, per SBMS, cleanup and disposal operations with the agreement that the Contractor shall assume all costs associated with the cleanup and disposal work.
- C. The disposal of contaminated material will be coordinated by MPO through the Environmental Waste Management Services Division, with appropriate documentation and disposition forms.

SC-26. RECORD DOCUMENT SUBMITTALS

- A. Do not use the set of Contract Drawings issued by MPO (see GC-35) for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for MPO's reference during normal working hours.
- B. Maintain a clean, undamaged set of black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
  2. Mark new information that is important to BNL but was not shown on Contract Drawings or Shop Drawings.
  3. Particular attention shall be given to recording of all underground utilities as well as the fire protection, fire alarm and fire detection system operations and maintenance manuals and record documents.
  4. Note related change-order numbers where applicable.
  5. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
- C. Refer to Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to MPO for the permanent project records.

<b>Delete next clause if no operating equipment is specified.</b>
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SC-27. OPERATION AND MAINTENANCE DATA

- A. To aid the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the Work, furnish and deliver the data described in this Section and in pertinent other Sections of these Specifications.
- B. Submit two (2) copies of data, bound in 8½" x 11" manuals, in 3-ring binders with section separators, complying with the requirements in the Shop Drawing section herein.
- C. Operating and Maintenance Instructions:
  - 1. Where Instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provisions of this Section. Clearly identify the contents of each Manual on the front cover.
  - 2. Contents: Include at least the following:
    - a. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.
    - b. Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.
    - c. Complete nomenclature of all parts of all equipment.
    - d. Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.
    - e. Copy of all guarantees and warranties issued.
    - f. Manufacturers' bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.
    - g. Such other data as required in pertinent Sections of these Specifications.
  - 3. Revisions:
    - a. Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of the Manual with MPO, and make the revisions in the Manual and resubmit.

SC-28. PREVENTATIVE MAINTENANCE PROGRAM

- A. A program of scheduling preventative and routine maintenance covering all operating equipment shall be prepared by the General Contractor, Vendors, and Subcontractors, as specified in these Supplementary Conditions.
- B. The preparation, submittal, and approval of this program on the attached data sheets, as well as the Operation and Maintenance Data Manuals, is prerequisite to Final Acceptance of the work and resultant Final Payment.
- C. Each Respective Trade Contractor, Vendor, and Subcontractor shall furnish to the General Contractor for compilation, the pertinent data shown on the attached form applicable to each piece of operating equipment.

ATTACHMENT - 2 Sheets - PMPD 1 & 2

**Delete next clause if none of listed materials are specified.**

SC-29. RECYCLED MATERIALS USE AND REPORTS

- A. To the fullest extent, the following building materials shall, by EPA Regulations, be supplied from manufacturers that produce these materials with the use of recoverable (recycled) materials as required by Federal Regulation 40 CFR 247 and 248. Written justification shall be submitted for use of materials that do not comply.
- B. Materials:
  - 1. Cement, Concrete, Masonry, Mortar, and Flowable Fill.
  - 2. Building and Roof Insulation Products.
  - 3. Carpet, Carpet Cushion, Floor Tile, and Floor Mats.
  - 4. Shower and Restroom Partitions.
  - 5. Wheel Stops, Patio Blocks.
  - 6. Signage.
- C. See the appropriate Sections for specifics.
- D. Reports must include quantities and dollar value of each material that contains recovered (recycled) material.

SC-30. CERTIFICATION

- A. Certification of compliance with specification performance standards and manufacturers' specifications and directions shall be furnished for any portion of this work for which specific performance requirements and/or manufacturers' specifications are listed.

- B. It shall be the responsibility of the General Contractor to secure two (2) copies of each certification when required and transmit same to BNL.
- C. Sample Certification Form (2 pages) is attached as an exhibit at the close of the Supplementary Conditions. Each item requiring certification shall be so noted and affidavits shall be filed singly to cover each specified material, installation, application, and the like.
- D. CERTIFICATION SHALL ACCOMPANY EACH SUBMITTAL.
- E. Packaged Equipment:
  - 1. Where packaged (factory assembled) mechanical and electrical equipment is furnished, a certificate shall be included with the submission of shop drawings or catalog data stating that the equipment complies with OSHA, National Electrical Codes, and applicable Underwriter's Laboratories Standards in respect to motor protection, grounding, and protection against hazards, and is approved by all Regulatory Agencies.

PREVENTATIVE MAINTENANCE PROGRAM OPERATING EQUIPMENT DATA

- 1. Equipment Name
- 2. Manufacturer
- 3. Model No.
- 4. Serial No.
- 5. Contractor
- 6. Specialty Contractor
- 7. Vendor
- 8. Job Name
- 9. Job Number
- 10. Agency from whom parts may be obtained:
- 11. Agency from whom service may be obtained:
- 12. Service Agreement:    Yes    No    Expires -
- 13. a) Guarantee:            Yes    No    Expires -  
       b) Warrantee:            Yes    No    Expires -
- 14. Equipment Location:    Building            Floor  
    Room No.            Area Des.
- 15. Area Served:            Building            Floor  
    Room No.            Area Des.
- 16. Furnished in accordance with:  
       Contract Drawing No.  
       Specification Paragraph

Date of Issuance: \_\_\_\_\_

Submitted By: \_\_\_\_\_

Equipment Name: \_\_\_\_\_

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PREVENTATIVE MAINTENANCE PROGRAM OPERATING EQUIPMENT DATA (cont'd)

- 17. List Shop Drawings, Equipment Cuts, Catalogs, or the other drawings which show this equipment.
- 18. Indicate spare parts lists, maintenance and instruction manuals, or other data furnished.
- 19. Indicate all services connected to this equipment - water, drain, steam, return, gas, vacuum, chilled water, electric, etc. Give sizes of connections, amount used, pressure, etc.
- 20. Type of refrigerant (if any)
- 21. Capacity of equipment
- 22. Electrical Characteristics:    Voltage            Amp            Phase
- 23. Electrical Circuit Data Panel Designation  
     Panel Location                      Circuit Number  
     Fuse Size                              Fuse Type
- 24. Location and data of any auxiliaries
- 25. Other Data

Date of Issuance: \_\_\_\_\_

Submitted By: \_\_\_\_\_

Equipment Name: \_\_\_\_\_

PMPD-2

CERTIFICATION OF SPECIFICATION COMPLIANCE

I/WE, the MANUFACTURER/SUPPLIER and INSTALLER of \_\_\_\_\_

as specified in Section Number \_\_\_\_\_ of the Contract Documents prepared by Brookhaven National Laboratory, Upton, New York 11973 for:

(Project Title) \_\_\_\_\_

(Building) \_\_\_\_\_ (J/N) \_\_\_\_\_

(Contract Number) \_\_\_\_\_

do (does) herein certify that all materials furnished for said project do fully comply with all specification requirements as stated within the Contract Documents and further certifies that installation of this work has been performed in strict accordance with recognized standards of the industry governing such work, and all applicable Codes, Regulations, and Standards.

CONTRACTOR: \_\_\_\_\_

CERTIFICATION BY: \_\_\_\_\_ TITLE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CERTIFICATION DATED: \_\_\_\_\_

Distribution:

Original and One Copy to:

Brookhaven National Laboratory  
(Lead) \_\_\_\_\_, Manager  
Building 134-C  
Upton, New York 11973

CERTIFICATION OF SPECIFICATION COMPLIANCE

CORPORATE ACKNOWLEDGEMENT

On the \_\_\_\_\_ day of \_\_\_\_\_, before me came \_\_\_\_\_  
to me known and who by me being duly sworn did depose and say that he resides at \_\_\_\_\_  
\_\_\_\_\_ that he is the officer of the said corporation executing  
the foregoing instrument that he knows the seal of said corporation, that the seal affixed to said  
instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said  
corporation and that he signed his name thereto by like order.

\_\_\_\_\_  
Notary Public

INDIVIDUAL ACKNOWLEDGEMENT

State of \_\_\_\_\_  
County of \_\_\_\_\_

On the \_\_\_\_\_ day of \_\_\_\_\_, before me came \_\_\_\_\_  
to me known and who by me being duly sworn did depose and say that he resides at \_\_\_\_\_  
\_\_\_\_\_ that he is the individual who executed the foregoing instrument.

\_\_\_\_\_  
Notary Public

PARTNERSHIP ACKNOWLEDGEMENT

State of \_\_\_\_\_  
County of \_\_\_\_\_

On the \_\_\_\_\_ day of \_\_\_\_\_, before me came \_\_\_\_\_  
to me known and who by me being duly sworn did depose and say that he resides at \_\_\_\_\_  
\_\_\_\_\_  
that he is a partner in the firm of \_\_\_\_\_  
doing business under the name of \_\_\_\_\_  
and that he executed the foregoing instrument on behalf of said partnership.

\_\_\_\_\_  
Notary Public

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END OF SECTION 000800