

GENERAL SPECIFICATION S-12

REVISION 27
Dated 10/12

ENVIRONMENT, SAFETY AND HEALTH REQUIREMENTS
FOR SUBCONTRACTOR WORK
AT BECHTEL MARINE PROPULSION CORPORATION
KNOLLS AND KESSELRING SITES

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PART I: GENERAL REQUIREMENTS

A. SCOPE

- A.1. This specification establishes the Environment, Safety, and Health (ESH) requirements for work to be performed by the Seller on Buyer's Sites. All Seller personnel are responsible for compliance with the standards, practices, procedures, and documents contained or referenced in this specification. Any actions identified in this specification as requiring Buyer approval shall be coordinated with the Buyer's Representative.
- A.2. The Department of Energy (DOE), through the Atomic Energy Act of 1954, is authorized to prescribe such regulations and standards as it deems necessary to protect health and minimize danger to life or property on DOE facilities. The Occupational Safety and Health Act of 1970 does not directly apply to working conditions of employees where DOE has exercised its statutory authority to prescribe and enforce safety and health regulations. All documents and standards referenced in this Specification, including Part IV and EXHIBITS, are part of these requirements.
- A.3. Any reference in this specification to Federal, State or municipal laws, codes or regulations is to the current version of the law, code or regulation even if it has been revised after the date of contract award, and shall apply with the same force and effect as if set forth herein in full.
- A.4. Definitions:
- A.4.1 **Buyer:** The Buyer is Bechtel Marine Propulsion Corporation (BMPC), Government Prime Contractor awarding the purchase order or subcontract, and it applies to all work to be performed at the Knolls Site, Niskayuna, New York; and Kesselring Site, West Milton, New York.
- A.4.2 **Seller:** The Seller is the person, firm or corporation with whom the purchase order or subcontract is written. The Seller has direct responsibility for ensuring all lower-tier subcontractors follow the requirements of this specification. Any requirements of the Seller in this specification also apply to the Seller's lower-tier subcontractors.
- A.4.3 **Buyer's Representative:** An employee of the Buyer who oversees the project and coordinates Buyer needs and Seller services. This includes obtaining necessary approvals from Buyer Site organizations for various work permits, or exceptions to this document.
- A.4.4 **Work Authorization/Work Release:** A formal written documented process whereby, after agreement by the Buyer's Representative with the Seller's scope of work and work controls for the day's activities, the Seller will be authorized by the Buyer's Representative to perform work. This process is expected to result in alignment on the work to be performed and not adversely impact the Seller.
- A.4.5 **On Site Safety Representative (OSSR):** An employee of the Seller who shall be designated as the full-time point of contact with the Buyer for all ESH concerns. See Part II, Section J.1 for further details on OSSR.
- A.4.6 **On Site Safety Compliance Officer (OSSCO):** A person who is designated by the Seller to act as the Seller's safety representative and that meets the required training and experience requirements as specified in Part II, Section J.2. This person may be designated as the competent person or qualified person for construction activities, if they meet the education and experience requirements.

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A.4.7 **Unplanned Event:** Is defined as an ESH occurrence that results in, or has the potential to, result in (“a near miss”), personal injury, property damage, environmental release or process loss. All ESH occurrences that are experienced by the Seller shall be immediately reported to the Buyer and they shall be investigated by the Seller. For more information see Part I, Section H.

B. WORKER COMPREHENSION OF REQUIREMENTS

- B.1 The Seller shall be held responsible by the Buyer for the safety of the Seller’s employees (and those of lower tier Subcontractors), and for taking corrective action on occupational safety, health and environmental deficiencies resulting from Seller operations.
- B.2 In the event that any Seller personnel are not able to read or comprehend English, the Buyer’s Representative shall be notified in writing prior to such personnel starting work on site. The Seller shall assign a specific individual (a bilingual individual, if necessary) to direct all on site workers, including those employees not able to read or comprehend English. Signs, tags and barricades shall be posted by the Seller not only in English, but in an appropriate language for the personnel not able to read or comprehend English.
- B.3 As a prerequisite for performing work, Seller personnel (including sub-tiers) shall be trained in the proper use of equipment to be used on site as well as trained/qualified for the particular operation/work to be performed under the contract, in accordance with all training requirements contained in all applicable mandatory standards (S-12, Part IV). The Seller shall maintain documentation of this training/qualification and make it available for review by the Buyer as part of any permit application, written procedure, or upon request (within 24 hours).
- B.4 If Seller personnel demonstrate a lack of requisite ESH knowledge, understanding, or skill, as determined by the Buyer, those personnel shall be retrained by the Seller. The Seller shall provide written documentation of the retraining. The Seller shall receive approval from the Buyer prior to allowing the affected personnel to perform any further work associated with the area of deficiency at the Buyer’s Sites.
- B.5 The Seller shall preclude any further work at Buyer’s facilities by any employee not demonstrating the proper safety posture, at the Buyer’s discretion.

C. BUYER’S SITE INDOCTRINATION AND WORKER HAZARD AWARENESS TRAINING

- C.1 All Seller personnel performing work on Buyer’s Sites are required to review an indoctrination presentation. The purpose of this presentation is to familiarize personnel with Buyer emergency procedures, basic radiological control, security information, safety compliance requirements and substance abuse policy. Seller personnel shall sign an acknowledgement documenting the review. The indoctrination shall be valid for a period of one year.
- C.2 The Seller is responsible for ensuring their workers, sub-tiers, and suppliers are informed of the foreseeable hazards and protective measures associated with the work on site. All Seller personnel performing work on the Buyer’s Site are required to be knowledgeable of ESH requirements associated with their work.
- C.3 The Seller shall ensure workers are knowledgeable of the requirements governing on site work, prior to performing work on the Buyer’s Sites. The Buyer reserves the right to administer individual written examinations subsequent to Seller personnel completion of the indoctrination review. The Buyer also reserves the right to administer individual written

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examinations to OSSR/OSSCO candidates subsequent to the Seller's request for their appointment, but prior to their interview by the Buyer.

- C.4 All Seller's performing on site work shall instruct their workers to: (a) observe the applicable occupational safety, health and environmental standards prescribed herein; (b) report promptly to the Seller's OSSR/OSSCO and supervisory personnel any condition which might lead to a violation of these standards; and (c) respond to warning signals which might be activated in the event of fire, radiation, or other emergencies.

D. OCCUPATIONAL INJURIES AND OTHER EMERGENCIES

- D.1 All occupational injuries occurring on Buyer's property shall be reported immediately to the Buyer. To the extent feasible, the Buyer will assist with first aid and ambulance service, for Seller's personnel engaged in on site work.
- D.2 The Seller shall comply with the Site emergency notification procedures. During an actual emergency or drill, the Seller shall comply with the instructions of the Public Address System or Buyer's Representative. This may necessitate leaving the job site until termination of the emergency condition or training exercise.

E. HAZARD ANALYSIS PLANS

- E.1 A Seller prepared written project specific Hazard Analysis Plan (HAP) shall be submitted to the Buyer for approval prior to the start of work on site. The project specific HAP is a high-tier, generic hazard analysis covering the hazards specific to each project. For example: The hazard analysis for a major construction project might be split up into five phases: (1) mobilization and site clearing, (2) site civil work, (3) steel erection, (4) building enclosure, and (5) building interior work. Major tasks associated with each phase (e.g., installation of siding, roofing work, etc.) shall be identified along with all foreseeable hazards and any planned protective measures (engineering controls, administrative controls, and personal protective equipment) to mitigate those hazards. The project specific HAP shall identify each work evolution for the entire job, all foreseeable hazards and any planned protective measures to mitigate those hazards. The project specific HAP is a dynamic document and shall be updated by the Seller as changes to the plan are identified and/or change orders are received from the Buyer. Update to the project specific HAP does not require re-review and approval by the Buyer, but shall be made available to the Buyer upon request. An example of a project specific HAP is provided in EXHIBIT 18.
- E.2 The Seller shall prepare the HAPs and shall sign the plans as having reviewed them prior to commencement of the affected work. HAPs shall be used as a tool for discussion of various work evolutions, any foreseeable hazards, and planned protective measures associated with the job/task at all pre-work briefings.

F. HIGH RISK WORK

- F.1 High Risk Work (HRW) is defined as that work which presents a significant risk of causing serious personal injury or a fatality, if performed improperly. The increased risk can also be based upon characteristics inherent in the work task, location, and/or materials, or proximity to other hazardous operations. To provide the appropriate level of assurance that this work will be conducted in a reliable and safe manner, higher management attention and more rigorous hazard control mechanisms and work

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processes are employed. A Seller-prepared written Plan/Procedure shall be submitted to the Buyer for approval.

A list of HRW evolutions, as determined by the Buyer, is provided in the box on the right and some of their associated control mechanisms are provided in EXHIBIT 6.

Examples of High Risk Work Include:

- Energized Electrical Work ≥ 50 volts
- Elevated Work $\geq 6'$ (Where a fall hazard exists)
- Excavations (digging w/ power equipment $\leq 3'$ of underground utilities w/ hazardous energy or personnel entry into a $\geq 5'$ deep excavation)
- Entry into a Permit Required Confined Space
- Diving Operations
- Blasting
- Building Demolition & Renovation
- Applicable Welding/Burning Operations
- Use of Lasers
- Critical Lifts
- Work on Stored High-Energy Systems
- Use of Temporary Building Support System(s)
- Entry into potentially immediately dangerous to life or health (IDLH) atmospheres
- Other work deemed by the Buyer to require High Risk Work authorization

F.2 It is the Buyer's policy that performance of HRW will be controlled to mitigate the risk as much as practical. To that end, the Seller shall scrub the work process, where feasible, to eliminate or reduce the hazard, or apply engineered and/or administrative controls to minimize the risk, and/or to use PPE to minimize the risk. To this end, the Seller shall obtain Buyer authorization to begin the planning for Seller intended HRW by completing Parts I & II of EXHIBIT 6A (HRW Authorization Form).

F.3 The Seller's workers shall also acknowledge in writing at the briefing that they have reviewed the scope of work to be performed and conclude that there is no acceptable alternate lower risk method to perform the work. The acknowledgement and participation in a pre-job briefing shall be documented (EXHIBIT 6B High Risk Work Acknowledgement and Briefing Sheet). The Seller's OSSR/OSSCO shall participate in the pre-job briefing of the HRW, be present at the work site and shall provide full-time overview of all HRW evolutions.

F.4 For operations involving HRW or unusual hazards, in addition to the control plans listed in EXHIBIT 6, a Seller prepared written task specific HAP shall be submitted to the Buyer for approval at least ten (10) days ⁽¹⁾ before the start of the HRW. The task specific HAP is a subset of the "project specific HAP", but is a more detailed plan. This task specific HAP shall identify each work evolution associated with the HRW task, all foreseeable hazards (not only HRW operations) and any planned protective measures (i.e., engineering controls, administrative controls, and PPE) to mitigate those hazards.

G. INSPECTIONS

G.1 The Seller shall document at a minimum weekly inspections of their work operations, facilities and equipment to ensure compliance with the requirements of this specification and all applicable Federal, State and Local regulations. A Seller performing construction work shall also perform daily inspections that typically focus on work in progress that day. The intent of the daily inspection is to check on the safety of specific work efforts that day. Documentation shall be maintained at the work site for all inspections performed for the entire duration of the subcontract, and shall be made available to the Buyer upon request. Performance of the weekly inspection can be used to meet the requirement of a daily inspection on the day that the inspection is completed. Inspections are not required during periods in which the Seller performs no work. This requirement is not applicable to service subcontracts where the Seller does not maintain an on site work area.

Notes: (1) Unless otherwise specified, the standard cycle time for the review and approval of S-12 submittals is (10) working days.

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- G.2 The Seller shall provide such information and assistance to the Buyer as may be required to aid in periodic Buyer inspections of Seller work operations, facilities and equipment.

H. UNPLANNED EVENTS

A formal inquiry process known as a "Critique" will be conducted by the Buyer or by the Seller's OSSCO, if invoked, to determine the facts and identify corrective actions associated with an occurrence resulting from a Seller operation. An "Occurrence" is defined as an unexpected or unplanned event which, in the Buyer's opinion, will have a negative impact on Buyer or Seller operations. Upon notification that a Critique is to be conducted, Seller personnel, as requested by the Buyer, shall attend the critique so that all pertinent facts associated with the occurrence can be obtained for formal documentation.

- H.1 The Seller's Contract Specific Safety Plan (CSSP- Refer to Part II, Section A) shall describe how the Seller will investigate and report (Critique) ESH unexpected "Occurrences" and include minimum requirements as specified. The investigative and reporting process shall investigate "near miss" situations in order to institute corrective actions that are intended to prevent future occurrences of the event, and also have a preventative effect on more serious situations.
- H.2 The Buyer shall be afforded the opportunity to evaluate the effectiveness of the Seller's investigation, and direct additional Seller actions based on the circumstances surrounding the occurrence. Upon notification that an investigation is to be conducted, Seller personnel shall participate in the investigation so that all pertinent facts associated with the occurrence can be obtained for formal documentation.
- H.3 Seller personnel shall be instructed to preserve any accident scene until the investigation has been completed. The operation and equipment used which caused the occurrence may be suspended, and the scene shall be preserved until released by the Buyer. The investigation shall be held as soon as practicable (within 1 working day) following the occurrence, as determined by the Seller with Buyer concurrence.
- H.4 A list of Buyer's Safety and Environmental Incident Reporting Criteria is included as EXHIBIT 3.

I. PERSONAL PROTECTIVE EQUIPMENT (PPE)

- I.1 A hard hat, safety glasses with side shields, and substantial footwear shall be worn at all times in posted construction areas, unless otherwise approved by the Buyer.
- I.1.1 Head protection shall meet the requirements of ANSI Z89.1.
- I.1.2 Eye and face protection shall meet the requirements of ANSI Z87.1 or CSA Z94.3.
- I.1.3 Foot protection shall meet the requirements of ASTM F 2413-05.
- I.2 Other PPE requirements are based upon the Buyer approved Seller prepared HAP (EXHIBIT 18), or the Buyer approved EXHIBIT 5 and Material Safety Data Sheets (MSDS).
- I.3 PPE requirements shall be posted on all sides of construction boundaries.

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J. SELLER'S INDUSTRIAL HYGIENE PROGRAM - EXPOSURE STANDARDS AND EVALUATIONS

The Seller is responsible to conduct an assessment of worker exposure to reduce the risk of work-related disease or illness. The assessment of worker exposure to chemical, physical, or ergonomic hazards is through appropriate (acceptable to the Buyer) workplace monitoring (based on personal, area, swipe, and bulk sampling); and observation. Monitoring results shall be documented which shall include; task description; monitoring location; description of sampling methods and durations; control measures in place during monitoring (including the use of PPE), and any other factors which may have affected the sampling results. The Seller shall determine the precautionary measures that need to be taken to protect workers during the workplace's normal operating condition and in foreseeable hazards (i.e., identification of inherent chemical, physical, or ergonomic hazards in the workplace and the established corresponding control measures) through the HAP (EXHIBIT 18).

- J.1 The Seller's personnel exposure to toxic substances or harmful physical agents shall not exceed the limit specified in the applicable OSHA expanded standard (e.g., lead, hexavalent chromium, cadmium, etc.). Where an expanded standard does not exist, the lower of the following is applicable: (1) the limits specified by the Occupational Safety and Health Administration (29 CFR 1910 and 29 CFR 1926), or (2) the current threshold limit values of the American Conference of Governmental Industrial Hygienists (ACGIH). The Seller shall comply with all limitations through modifications of work practices and/or engineering controls whenever feasible. In the event such controls cannot be instituted, or when otherwise required by applicable standards, the Seller shall provide and require the use of National Institute of Occupational Safety and Health (NIOSH) certified respirators.
- J.2 The Seller is responsible for performing all evaluations, analysis and workplace monitoring to ensure compliance with exposure limits. All monitoring documentation shall be provided to the Buyer, for information. Equipment and methods used to determine an occupational exposure shall be performed by knowledgeable personnel and conform to current accepted analytical methods and practices. Air monitoring shall be performed following NIOSH/OSHA methods or alternative methods approved by Buyer. Analytical labs shall be AIHA (American Industrial Hygiene Association) accredited.
- J.3 In addition to monitoring required to be performed by the Seller, Seller personnel may be required to wear Buyer provided or mandated personal monitoring equipment for industrial hygiene measurements (e.g., noise dosimeters, air samplers for measuring dust, asbestos fibers, and hazardous chemicals). Furthermore, the Buyer may perform similar monitoring in the vicinity of the Seller's work area or require the Seller to perform such monitoring using the Buyer's equipment and at the Buyer's expense.
- J.4 Established operational procedures (e.g., use of a definitive manufacturer's operational procedure and specified PPE), or subsequent use of Seller procedure for which monitoring substantiated a negative exposure assessment (NEA) may be used without specific monitoring, when approved by the Buyer.

K. HAZARD COMMUNICATION

The Buyer will coordinate training and education of all affected Seller personnel to achieve compliance with all parts of 29 CFR 1910.1200 (Hazard Communication) for situations involving actual or potential exposure to Buyer-owned toxic chemicals and harmful agents for which the Seller was not contracted to be exposed.

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L. MATERIALS ON SITE

- L.1 The on site storage of environmentally harmful materials (such as chemicals, oils, hazardous or non-hazardous wastes) shall be controlled to prevent leakage or spillage and as required by the approved Exhibit 5.
- L.2 The Seller shall take steps to minimize the amount of material brought on site, storage time of the material and the waste resulting from use of the material.
- L.3 Flammable and/or combustible liquids, when stored on site, shall be stored in approved (i.e., listed or labeled by a Nationally Recognized Independent Testing Laboratory) safety cans or flammable liquid storage cabinets.

M. RELOCATABLE STRUCTURES, TRAILERS AND LAYDOWN AREAS

The Seller shall identify, for Buyer approval, their space to work, accumulate materials, or locate relocatable structures on site.

- M.1 The Seller shall notify Buyer's Representative of the need to bring a relocatable structure on site, ten (10) days in advance of their needs. The Seller shall identify the size and type of structure (e.g., trailer, storage container, etc.), and the project for which it is being requested. The Buyer's Representative will respond with a controlling document, "Relocatable Structures Construction Work Procedure." The Seller shall complete the requested information for Buyer's review and approval. The Buyer will review and approve within ten (10) days for the relocatable structure to be brought on site.
- M.2 Any relocatable structures, including construction trailers, used on site by the Seller, shall be in compliance with the applicable building and fire codes and the DOE Standard on Fire Protection for Relocatable Structures, DOE-STD-1088-95.

N. WASTE DISPOSAL

The Seller shall not dispose of any materials on site (i.e., pouring onto the ground, dumping in a ditch/storm drain, flushing down a sanitary drain, throwing into a dumpster, venting or degassing) without prior approval of the Buyer. There are two (2) legitimate sources of waste which may be generated under the contract, as follows:

- Waste generated from the removal/demolition of existing Buyer property as a result of activities under the contract. These shall be disposed of as specified in the contract technical specification (see Buyer's Waste Evaluation List).
- Waste generated from Seller operations due to Seller provided materials or methods as a result of activities under the contract. All such wastes shall be identified in the Seller's Waste Process Evaluation List (EXHIBIT 11) (see Part II, Section Y).

When it comes to waste, it is the Buyer's policy to "Know before Do" (i.e., understand what waste could be generated, KNOW its hazards and how it must be managed BEFORE you begin work). Therefore, it is the Seller's responsibility to know and understand what wastes are listed on Buyer's Waste Evaluation List and EXHIBIT 11 and their proper disposal paths prior to generating the waste. If a waste generating process is not listed, do not generate the waste until it has been evaluated and

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its proper disposal path has been identified and approved by the Buyer. If a waste is generated by a Seller working outside the contract technical specifications, or using materials or methods not approved by the Buyer on EXHIBIT 11, the Seller shall turn such waste over to the Buyer for disposal, however, the Buyer will bill the Seller for the full cost of disposal of such waste, as determined by the Buyer.

- N.1 Buyer's Waste Streams: Unless otherwise specified in the contract technical specification, all wastes generated under the contract shall be placed in Buyer provided containers for disposal and/or recycling by the Buyer. The Seller shall place waste in areas designated by the Buyer, as follows:
- N.1.1 Sanitary Trash – Ordinary garbage, such as paper bags, food scraps, yard/vegetation waste, packaging and cigarette butts, may be disposed of in the appropriate dumpsters (8 CY receptacles with side and top loading) or trash cans around the Site.
 - N.1.2 Scrap Metal – Scrap metal shall be placed in scrap metal dumpsters. Drums and aerosol cans are not acceptable as scrap metal. Materials attached to scrap metal (such as chair cushions) or scrap metal items containing light bulbs or batteries are also not permitted. The attached item shall be removed prior to placing the scrap metal portion in a dumpster. Scrap metal for recycling shall not be placed in any construction and demolition (C&D) dumpster.
 - N.1.3 Clean Soil - The Seller shall place clean soil from excavation activities on site in an area designated by the Buyer. Clean soil shall not contain oil, chemicals, radioactivity, containers, or C&D debris. To the extent possible, visible pieces of non-soil material shall be removed before and/or after delivery to the designated area. Incidental pieces of concrete, asphalt, wood, brick, or non-hazardous metal less than six (6) inches in diameter may be contained in the clean soil.
 - N.1.4 Construction and Demolition Debris – Construction and Demolition (C&D) debris shall be placed in C&D dumpsters (open-top roll-off receptacle) located around the Site.
 - N.1.5 Recyclable Materials - Recyclable material such as glass, plastic, paper, cardboard, tin cans, etc. shall be placed in the appropriate collection containers (i.e. recycling, single stream, co-mingle) located around the Site. Compliance with the Buyer's recycling program is mandatory. Aerosol cans (empty cans only, no gas/liquid) marked empty may be put in a co-mingle recycle container (Knolls Site only), or in sanitary trash (Kesselring Site).
 - N.1.6 Non-hazardous Chemical and Hazardous Chemical Waste
 - N.1.6.1 The Seller shall turn over to the Buyer for disposal all chemical waste (e.g., spent chemicals or strippers, chemically-contaminated rags or debris, asbestos, PCB waste, partially full non-functioning aerosol cans, etc.), hazardous and non-hazardous, generated as a result of work under the contract.
 - N.1.6.2 Chemical waste shall be packaged and stored in containers compatible with the waste which have been appropriately labeled. The Buyer will provide the containers and labeling for Seller's use. The Seller shall provide the manpower to package and label the waste, and to place the waste in areas designated by the Buyer. Hazardous and non-hazardous waste storage

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areas shall be pre-approved by the Buyer.

N.1.6.3 For waste packaged by the Seller, the Seller shall inspect waste container contents and certify that the "Waste Inventory List" is accurate, prior to acceptance by the Buyer. The Seller signature requirements will be annotated on the Waste Inventory List, available from the Buyer's Representative.

N.1.6.4 Where a question arises regarding whether an individual waste generated as a result of activities conducted under the contract is hazardous or non-hazardous; the Seller shall provide conclusive evidence (e.g., MSDS's, Lab results) prior to turnover to the Buyer. The Buyer may choose to perform independent analysis.

N.1.6.5 Due to chromium content, leather products shall be managed as hazardous waste (when determined to be waste), unless the Seller provides vendor certification that leather is not processed with chromium.

N.1.7 Other Controlled Waste - The Buyer may choose to control the disposal of certain waste streams which are not controlled at the State or Federal level. Such items will be specified in the Buyer's Waste Evaluation List or the Buyer approved EXHIBIT 11.

N.1.8 Ionization Type Smoke Detectors

N.1.8.1 At the Knolls Site, an ionization smoke detector that is to be removed from service for storage or disposal shall be turned over, immediately upon removal, to the Buyer's Representative to be properly controlled. The Buyer will be responsible for the proper control and disposal of the detector.

N.1.8.2 At the Kesselring Site, ionization type smoke detectors are required to be labeled with the radioactive tri-foil symbol and a black on white sticker stating that the contained material is not associated with the Naval Nuclear Power Program. Prior to removal from service, a determination of the applicability of requirements by the Buyer will be made. Ionization detectors may only be removed from service by the Site's licensed fire alarm system contractor, unless otherwise approved by Site Radiological Controls personnel and controlled as radioactive material until such time that the Site's fire alarm system contractor can take possession of the detector(s). Ionization detectors removed from service by the Site's licensed fire alarm system contractor, or turned over to them by Site Radiological Controls, shall be removed from the site the same day, and be handled and disposed of in accordance with regulatory requirements for ionization type smoke detectors.

N.2 Seller's Responsibility for Disposal/Recycling of Waste: Depending upon the (Construction or Service) contract, the contract technical specification may require the Seller to remove all non-hazardous waste from C&D activities from the site for disposal and/or recycling. In this case, the following additional requirements apply:

N.2.1 Submittals:

N.2.1.1 The Seller shall submit the following to the Buyer's Contract Administrator prior to issuance of the Notice to Proceed.

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N.2.1.1.1 Waste Management Plan, for approval. The plan shall include the following:

N.2.1.1.1.1 Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste to be generated by the work. Include estimated quantities by volume and assumptions for estimates.

N.2.1.1.1.2 Waste Reduction Work Plan: List each type of waste and whether it will be recycled at a state-authorized recycling facility, or disposed of at a state-authorized disposal facility. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedure. Include method that will be used for separating recyclable waste.

N.2.1.1.2 Disposal facility name and address, and copy of the appropriate permit(s) and user's agreement(s) from the initial transfer station (if applicable) and the ultimate disposal facility, for approval. All subsequent changes to the disposal facility location shall also be approved by the Buyer.

N.2.1.1.3 Recycling facility name and address, copy of the appropriate permit(s) and a written certification that the product will be recycled and the facility will accept Buyer material, for approval.

N.2.1.1.4 Name and address of the transporter(s), and a copy of the New York State 6NYCRR Part 364 Transporter's permit(s), for information.

N.2.1.2 The Seller shall submit to the Buyer, for information, a monthly report (within 5 work days from the end of the month) of the quantity (cu. yds and tonnage) of material disposed of off Site. This shall be broken down into two categories as follows: (1) C&D debris, and (2) recycled material (i.e., scrap metal, concrete, asphalt, etc.).

N.2.2 Waste Management Plan Implementation

N.2.2.1 Implement the Waste Management Plan as approved by the Buyer. Provide handling, containers, storage, signage, transportation, and other items as required to implement the plan during the entire duration of the subcontract.

N.2.2.2 Engage a Waste Management Coordinator to be responsible for implementing, monitoring, and reporting the status of the plan. Designate the name of the Waste Management Coordinator in writing to the Buyer.

N.2.2.3 The Seller shall train workers, sub-tiers, and suppliers on proper waste management procedures, as appropriate for the work occurring on the project. Distribute the Waste Management Plan to entities when they first

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begin work on-site. Review plan procedures and location established for recycling and disposal and document such reviews.

N.2.3 Disposal of Waste:

N.2.3.1 It is Buyer's goal to recycle as much non-hazardous C&D waste as possible including the following materials:

N.2.3.1.1 Metal Waste: Structural and miscellaneous steel, metal studs, electrical conduit, copper wiring, reinforcing steel (rebar), etc.

The Seller shall recycle scrap metal at a recycling facility.

N.2.3.1.2 Non-Metal Waste: Site-clearing waste, asphalt, concrete, packaging materials (i.e., paper, cardboard, boxes, wooden crates, plastic pails).

N.2.3.2 Except for items or materials to be recycled, the Seller shall remove from site and dispose of all non-hazardous waste from C&D activities at a disposal facility acceptable to the Buyer (See EXHIBIT 28). The Seller shall ensure any C&D waste disposal is in accordance with local regulations.

N.2.4 Roofing material shall be considered construction debris. If roofing material contains asbestos, the Seller shall verify that the selected disposal facility will accept such material prior to obtaining the appropriate permit and/or user's agreement and Buyer approval for disposal.

N.2.5 All Seller provided Containers must be identified with the Company name, content of waste materials to be disposed of in the container and/or prohibited materials not allowed to be disposed of in the container.

O. TEMPORARY CONNECTIONS

- O.1 Temporary connections to existing Buyer services (such as water, electrical power, sewers, ventilation ducts, gas lines, etc.), shall be authorized by the contract technical specification.
- O.2 The Seller shall complete Parts A, B, and C of EXHIBIT 31 and submit for approval at least ten (10) days prior to the planned connection and energization.
- O.3 Unless approved by the Buyer, all temporary connections shall be de-energized or de-pressurized at the end of each working day. All lines or hoses are to be disconnected from their source(s) and stowed properly.
- O.4 In situations where the Seller may create a cross-connection between the Site's potable water system and a non-potable fluid, an acceptable form of backflow or back-siphon protection is required. It is the Seller's responsibility to schedule, obtain from the Buyer, and install a suitable backflow prevention device (e.g., double check valve assembly, reduced pressure zone valve assembly, etc.) appropriate to the degree of hazard present for any temporary connection to the Site's service water or fire main system. The Buyer will provide personnel to test the device, when required, following the installation of the device(s).

PART I: GENERAL REQUIREMENTS

P. SITE DRAINAGE SYSTEM

- P.1 The Seller shall prevent the discharge of water associated with Seller operations into any site drainage system or adjacent waterways.
- P.2 In the event that standing water becomes collected as a result of Seller's operations (such as in a revetment or excavation) the Seller shall sample the water for Buyer analysis, unless otherwise approved by the Buyer. Excavation dewatering may require filtering for solids removal prior to discharge. Upon receipt of the sample results, the Buyer will direct the Seller to pump the water into containers for treatment or disposal, or into the site discharge system, based on the analytical results.
- P.3 The Seller shall wash equipment used for concrete work only in areas designated by the Buyer.
- P.4 Drains to be blocked shall be designated by the Buyer.
- P.5 The Seller shall comply with the Site's Storm Water Permit for Municipal Separate Storm Sewer Systems (MS4). The Seller shall implement the necessary control measures established in the contract technical specification or as directed by the Buyer to prevent unapproved discharges, appropriately manage the construction/post-construction site, and maintain good housekeeping and pollution prevention controls. For construction sites that disturb less than one (1) acre of soil, the Seller shall develop an erosion and sediment control plan prior to the commencement of work. EXHIBIT 32 shall be completed and enclosed along with an erosion and sediment control plan for Buyer approval at least ten (10) days prior to starting on site work.
- P.6 For construction sites that disturb greater than one (1) acre of soil, the Seller shall comply with the Buyer approved site specific Storm Water Pollution Prevention Plan (SWPPP) and with the State Pollutant Discharge Elimination System (SPDES)/National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Construction Activities. The Seller shall sign a copy of the SWPPP certification page and submit it to the Buyer, at least ten (10) days prior to starting any soil disturbing activity.

Q. SPILLS/RELEASES

- Q.1 The Seller shall immediately (**within five (5) minutes**) notify the Buyer verbally or by telephone extension 116, or by dialing 395-4899 (Knolls), or 884-1219 (Kesselring) in the event of any environmental concerns including leaks, or spills of environmentally harmful material (i.e., chemicals/oils/gas).
- Q.2 The Seller shall control or contain the spilled material and limit access to the area. Cleanup actions shall be the responsibility of the Seller and shall be initiated as soon as possible under the direction of the Buyer's Representative. The Seller shall provide waste generated from the cleanup actions to the Buyer for disposal. The Buyer retains the right to bill the Seller for the full cost of disposal of such waste, as determined by the Buyer.
- Q.3 Notifications to the appropriate regulatory agencies will be made by the Buyer. If appropriate, the Seller will be reported as the responsible party.

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R. AIR EMISSIONS

- R.1 The Seller shall not construct or operate temporary air exhaust systems or tie into any existing Buyer air exhaust systems without the prior approval of the Buyer.
- R.2 Whenever possible, air exhaust systems (for example welding exhaust) will be of the re-circulating type and return the exhausted air into the room. All such systems will require the prior approval of the Buyer.
- R.3 Venting (bleeding) hazardous or ozone depleting substances (such as Freon, or Halon) to the atmosphere is prohibited. Operations of this type will require use of a device which allows material to be collected and reused in the system or recycled upon completion of the work. Venting of any material is generally prohibited. On certain occasions it may be permitted but will require the prior approval of the Buyer.
- R.4 The Seller shall provide a copy of the license for any and all personnel that service the Buyer's equipment containing refrigerants, in accordance with 40 CFR 82 Subpart F. The license shall be provided at least ten (10) days prior to start of work.
- R.5 Any paints, coatings or other materials meeting the definition of Architectural and Industrial Maintenance Coatings under NYSDEC Regulation 6 NYCRR Part 205 will be required to meet the volatile organic compound (VOC) limitations as applied and container labeling requirements as defined in the regulation.
- R.6 Any adhesive, sealants and primers meeting the definitions listed in NYSDEC Regulation 6 NYCRR Part 228-2 – Commercial and Industrial Adhesives, Sealants and Primers will be required to meet the volatile organic compound (VOC) limits as applied and container labeling requirements defined in the regulation.
- R.7 All asphalt paving and asphalt bases surface coatings meeting the definitions listed NYSDEC Regulation 6 NYCRR Part 241 – Asphalt and Asphalt Based Surface Coating will be required to meet the product specifications, volatile organic compound (VOC) limits, and container labeling requirements defined in the regulations.

S. BERYLLIUM CONTROL (Knolls Site Only - See EXHIBIT 26)

- S.1 The Seller shall not bring onto Buyer Sites any objects made of materials that contain 0.1% or greater beryllium that may be released as airborne particles.
- S.2 Medical surveillance for beryllium-related disease and information regarding the disease and the Buyer's Chronic Beryllium Disease Prevention Program shall be provided by the Buyer to all on site Seller personnel who have ever been exposed to airborne beryllium at a Buyer's Site or at any other DOE Site. Compliance with Federal rule 10 CFR Part 850 requires that the Seller identify each such person who will perform work at a Buyer's Site, even if that work will not involve exposure to airborne beryllium. To assist in identifying those personnel, the questionnaire of EXHIBIT 13 is attached for the Seller to provide to all Seller personnel who are expected to work at Buyer Sites on five (5) or more days under the contract. Seller personnel who report a history of beryllium exposure at a Buyer's Sites or another DOE Site shall be identified to the Buyer's Representative prior to performing work at a Buyer's Site, or within ten (10) days of having worked at the applicable Buyer's Site for five (5) or more days under this contract, using the report of EXHIBIT 13. This will enable the Buyer to provide

PART I: GENERAL REQUIREMENTS

beryllium medical surveillance (which the employee may decline) and information regarding beryllium disease and the Buyer's Chronic Beryllium Disease Prevention Program (the Seller's personnel shall participate in this information session). Submittal of Attachments 1 and 2 of EXHIBIT 13 by the Seller is required if any Seller employees are identified that believe they were, or believe they may have been, exposed to airborne beryllium at a Buyer's Site or another DOE Site. It is not required for either Attachment 1 or Attachment 2 to be submitted to the Buyer if the Seller identifies that no Seller personnel have such a beryllium exposure history.

T. PETROLEUM TRANSFER OPERATIONS

- T.1 The Seller may use EXHIBIT 12 for Fuel Transfers if concurred with and signed by the Seller.
- T.2 All Seller petroleum transfer operations shall have appropriate secondary containment.
- T.3 The Seller shall provide appropriate spill control equipment (i.e., absorbents, containers, etc.) where there is a potential for a spill.
- T.4 All Seller vehicles equipped with hydraulic components shall carry a bag of speedy-dry, or equivalent.

U. PESTICIDES

- U.1 Any application of pesticides or herbicides on site requires prior Buyer approval, at least ten (10) days prior to the start of work.
- U.2 If the Seller is required to apply pesticides or herbicides on site, then the Seller shall submit proof of New York State Certified Pesticide Applicator or Technician certification.

V. WETLANDS/NEPA/STREAM PROTECTION

- V.1 Any work to be done within or adjacent to a known or suspected wetland environments shall be reviewed with the Buyer prior to any degree of disturbance to the area.

END OF PART I

PART II: PRE-WORK REQUIREMENTS

A. SELLER SAFETY PROGRAM

For all subcontracts, UNLESS OTHERWISE NOTED in the bid requirements, the Seller shall develop and submit a Contract-Specific Safety Plan (CSSP) for Buyer Information, immediately after award. The CSSP shall state the nature of the work, potential hazards anticipated, how the hazards will be mitigated, or how workers will be protected from the hazards. The CSSP shall be submitted in two separate sections (A.1 & A.2 below):

- A.1 Corporate Section: Include the Seller's corporate safety program that addresses the OSHA requirements and standard industry hazards applicable to the subcontract scope of work. This safety program shall include, but is not limited to, the following elements: safety policies, safety training (e.g., elevated work, confined space entry, lockout/tagout), worksite inspection and monitoring programs, safety and industrial hygiene communication, management and employee responsibilities, hazard communication program, injury/illness record keeping programs, and PPE program.
- A.2 Buyer-specific Section: Address the Buyer-specific requirements identified in the Contract Technical Specification Scope of Work, existing Buyer workplace hazards identified in the Seller's project specific HAP (EXHIBIT 18), and task specific HAP for HRW, as defined in this document.
- A.3 The Seller shall flow down requirements identified in this specification to subcontracts for all Sub-tiers. The Seller is responsible to perform training as necessary to ensure sub-tiers are knowledgeable of the Buyer's requirements. The Buyer has the right to validate that the work is being performed in accordance with a documented safety plan, and to stop work and resolve any noncompliance with applicable ESH requirements for this contract and subcontracts for all tiers associated with this subcontract.
- A.4 If a conflict exists between the provisions of the Seller's safety program and this specification, the provisions/requirements providing the greater protection shall be complied with.
- A.5 The Seller's CSSP; shall describe how the Seller will investigate and report ESH "Unplanned Events" defined in Part I, Section H and include the following minimum requirements.
- A.5.1 Report all occurrences (e.g., near miss, first aids, recordable injuries and illnesses, days away cases, and environmental releases) to the Buyer immediately.
- A.5.2 The Seller shall conduct an investigation of all occurrences. Investigations shall include:
- Identification of all occurrence causal factors (root and contributing causes) using pre-approved investigative means.
 - Identification and documentation of all corrective actions.
 - Documentation of closure of all identified corrective actions.

B. COORDINATION WITH BUYER'S REPRESENTATIVE

The Subcontract Technical Representative (STR) or Service Contract Work Administrator (SCWA) is the Buyer's Representative responsible for day-to-day oversight and coordination of Seller operations. As such, the Seller shall inform the STR or SCWA when Seller personnel are on site. The Seller and Buyer shall have a shared understanding of the scope of work to be accomplished during that day's work prior to the Buyer giving the Seller a "Work Authorization/Work Release" (refer to definition in Part I, Section A).

PART II: PRE-WORK REQUIREMENTS

C. USE OF MAJOR EQUIPMENT

Ten (10) days prior to use of any major equipment on site, the appropriate Seller representative shall sign and submit the Major Equipment Declaration form as shown in EXHIBIT 17, for all Seller and lower tier contractor major equipment. This requirement applies to rented or leased as well as owned or operated major equipment. Vehicles contracted under Part 364, Waste Transportation Permit, follow separate inspection criteria and are exempt from this requirement.

D. PERMITS AND PLANS REQUIRED

D.1 For a variety of on site work tasks, the Seller shall obtain authorization to proceed via the Buyer's permitting and plan system. The Seller shall identify the scope of work and process the requested Permits and Plans from the Buyer **at least ten (10) days, with exception to Excavation Permits and Elevated Work which is at least twenty (20) days** before any of the following operations are performed. Buyer may require the Seller to participate in a work overview to a Buyer organized review board prior to performing the identified work task. The work may be HRW and Buyer authorization (EXHIBIT 6A) is required prior to beginning to plan the execution (see Part I, Section F).

D.2 The following operations require the use of a Buyer approved Work Permit:

- Use of flame, hot work (welding, torch cutting and soldering). See EXHIBIT 20
- Use of respirator See EXHIBIT 21
- Entry into a permit-required / non permit confined space See EXHIBIT 22A&B
- Excavation Permit See EXHIBIT 23
- Penetration Permit See EXHIBIT 24
- Asbestos removal/disposal/handling See EXHIBIT 25
- Work in beryllium restricted-access areas See EXHIBIT 26

The Seller shall return the completed Permit to the Buyer upon completion of work.

D.3 Under certain circumstances additional documentation in the form of a specific work plan or procedure is required. These Plans are:

- Energized Electrical Work (greater than 50 volts) See EXHIBIT 14
- Elevated Work (6 feet or more) See EXHIBIT 15
- Excavation (5 feet or more) See EXHIBIT 16

E. WRITTEN WORK PROCEDURES

E.1 Work with potentially hazardous materials or physical agents may require actions by the Seller to ensure that safe working conditions are maintained and that OSHA Permissible Exposure Limits (PEL's) or American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Values (TLV's) are not exceeded. If those actions include:

- implementation of engineering controls (e.g., exhaust ventilation or local containment enclosures), or
- use of respiratory protective equipment, or
- performance of workplace exposure monitoring (e.g., air sampling or noise level measurements).

Then the Seller shall provide a detailed written work procedure to the Buyer for approval. The procedure(s) shall describe as a minimum the sequence of events, exposure controls, past

PART II: PRE-WORK REQUIREMENTS

experience with procedures (if any), training, respiratory protective measures and workplace monitoring which will be performed.

- E.2 The Seller is responsible for ensuring that employees are qualified to work with the designs, methods, materials and procedures that have been prepared.
- E.3 The procedure(s) shall be submitted to the Buyer for approval at least ten (10) workdays before the evolution is to begin. See EXHIBIT 27 for a procedure template.

F. MATERIAL SAFETY DATA SHEETS

- F.1. All materials brought on site for use shall be accompanied by the relevant MSDS. For any material not on the Buyer List of Exempt Products (LEP) ⁽¹⁾ the Seller shall submit for approval an EXHIBIT 5 ⁽²⁾ for each liquid (cutting oils, fluids, acids, bases, cleaning solvents and solutions, coatings, thinners, etc.), gas, aerosol, and easily divisible solid chemical which will be used on site by the Seller in the performance of this contract. In addition, the Seller shall submit for approval an EXHIBIT 5 for all metal products used on site in the performance of this contract when its physical form has the potential to be significantly altered by work evolutions (cutting, grinding, abrading, burning, drilling, welding, etc.) potentially resulting in exposure above the occupational exposure limit.

Each EXHIBIT 5 shall contain a description of what the product is, the intended use of the product, the maximum amount of product that will be on site on any given day, the estimated total amount of each product that will be consumed, the container size of each product, the location of product use; indoors (building number, room, etc.) or outdoors (general location) and the expected waste to be produced and their respective disposal path(s). A current MSDS appropriate to the material being used (i.e., manufacturer, formulation, and date of manufacture) shall be attached to an EXHIBIT 5 for Buyer's approval for each product listed on the EXHIBIT 5. For some products (paints and coatings, pesticides, etc) Product Data Sheets will need to be provided in addition to the MSDS.

All EXHIBIT 5's shall be submitted to the Buyer for approval at least ten (10) days prior to bringing these materials on site. Any changes to the materials listed on the EXHIBIT 5 (i.e., chemical substitution) will require filing another EXHIBIT 5 for that material.

- F.2 The Seller shall be responsible for complying with the requirements of 29 CFR 1910.1200 or 29 CFR 1926.59, Hazard Communication, including training of Seller personnel on how to properly use chemicals and materials by following MSDS's. MSDS's for any product should be made available to the requestor upon request.
- F.3 Any materials brought on site by the Seller, but not used on site (i.e., materials normally kept in the Seller's vehicle) do not require an EXHIBIT 5. The Seller shall notify and obtain approval from the Buyer prior to bringing such material on site. Additionally, a current MSDS shall be immediately available for each such material.

Notes:

- (1) A copy of the Buyer's List of Exempt Products (LEP) can be obtained from the Buyer's Representative upon request.
- (2) Exempted materials does not relieve the Seller from having to provide information on the additional quantities of material to be brought on site and its intended use.

PART II: PRE-WORK REQUIREMENTS

G. STATE OR FEDERAL PERMIT REQUIREMENTS

- G.1 The Seller is responsible for complying with all Federal and State environmental regulations.
- G.2 The Seller shall allow for the time it takes for the Buyer to make an application or modification to an existing permit and its receipt from the regulatory agency. Some examples of Seller operations that could be held up by the need for a State or Federal permit are:
 - G.2.1 Installation of a spray booth where a paint spray gun is to be used by the Seller.
 - G.2.2 Seller shall provide the horsepower rating and duration of operation for all generators to be brought on site for the work evolution. This includes operation of temporary internal combustion power generating equipment on site for more than thirty days; or the operation of emergency diesel powered generators rated at 400 brake horsepower or greater for 500 hours or more per twelve month period; or the operation of gasoline powered non-emergency generators rated at 50 brake horsepower or greater regardless of the length of running time.

H. REGULATORY NOTIFICATIONS

The Buyer will coordinate any regulatory notifications required as a result of work under the contract. Where emergent issues create the need for a regulatory notification, the Seller shall notify Buyer immediately upon identification of the issue. The Seller shall provide any information requested by Buyer to support regulatory notification.

I. EMPLOYEE SAFETY OR HEALTH CONCERNS

DOE Occupational Safety and Health Protection Policy require that Sellers furnish Seller employees employment and a place of employment which is free from occupational hazards. To comply with DOE requirements, all Sellers shall inform their employees and lower tier Subcontractors that a formal system exists for Occupational Safety and Health Protection at DOE facilities. A poster (EXHIBIT 4) which details the system is prominently posted in various locations at each site.

- I.1 As a minimum, Sellers shall inform their employees and lower tiers that they:
 - I.1.1 Are encouraged to report to the Seller either orally, or using Seller provided forms, any Seller conditions or practices which they consider detrimental to their safety or health or which they suspect are in violation of the Buyer's prescribed safety and health standards. The Seller shall inform the employee promptly of the disposition of the employee concern, document the concern and its resolution, and make these documents readily available to the Buyer upon request.
 - I.1.2 Are permitted to file a concern directly with Buyer or the Site DOE Field Office using the format outlined in (EXHIBIT 4), by sending a letter or by oral means. Although, Sellers are encouraged to report employee concerns to the Buyer's Representative first.
- I.2 A DOE procedure has been developed for use by any employee who wishes to report a safety or health related concern. Each Site's Safety Office also has an internal procedure for processing employee health and safety concerns. Sellers are to notify their employees that in the event a concern form is filed, the DOE will exercise its investigative authority and will inspect the on site work area to validate the basis for the concern.

PART II: PRE-WORK REQUIREMENTS

I.3 All Sellers shall instruct their employees initially and periodically during performance of on site work (at least every year if contract exceeds one (1) year) of these requirements

J. SELLER'S DESIGNATED SAFETY REPRESENTATIVE

J.1 On Site Safety Representative (OSSR)

J.1.1 The Seller is required to designate at least one OSSR who shall be interviewed and approved by the Buyer's Safety Manager or his designee prior to On-Site work. The length of this approval is for the length of the contract, or for five years, whichever is greater. Any changes/substitutions in assigned OSSR personnel shall be submitted in writing to the Buyer Representative for Buyer concurrence prior to becoming effective.

J.1.2 An OSSR is required for:

- All Construction subcontracts
- Service subcontracts where the scope of work is construction-like or where the non-construction-like work to be performed includes on site Seller supervision. Construction-like work is defined as work which includes the erection/demolition of or alternation/repair (including painting and decorating) of buildings or structures, routing of cables or pipelines, the excavation or boring of soils, the lifting and handling of substantial materials.
- Any subcontract as determined by the Buyer on a case basis. Typically, the OSSR determination will be made at the time of subcontract preparation prior to starting work on site. The Buyer retains sole authority to make this determination.

Exception: An OSSR is not required for subcontracts when the scope of work will result in only a single employee of the Seller being present on site to perform work.

J.1.3 The Seller should consider an individual with knowledge of ESH regulatory requirements and ESH Management Systems when designating the OSSR. This individual should also possess leadership, guidance, and authority skills.

J.1.4 The OSSR's responsibilities, as a minimum, include:

- Be the Buyer's point of contact for ESH related items for the project.
- Have authority to stop work if work is in a non-compliant condition.
- Be familiar with the task specific HRW, and HAP(s).
- Be available to participate in Buyer safety inspections.
- Brief all subcontractor employees, including sub-tier subcontractors to the project ESH issues/concerns/requirements.
- Ensure all ESH requirements/regulations are being met.
- Implement proactive work practices/processes that effectively minimize the risk of occupational injury.

J.1.5 The OSSR shall be on site whenever any work is being performed.

J.2 On Site Safety Compliance Officer (OSSCO)

An OSSCO is required for all major construction projects and/or construction projects with complex work evolutions. Typically, the determination of the need for an OSSCO will be made at the time of subcontract preparation prior to starting work on site. The Buyer retains sole authority to make this determination.

PART II: PRE-WORK REQUIREMENTS

The Seller shall submit the resume of the OSSCO candidate to the Buyer, who shall be interviewed and approved by the Buyer's Safety Manager or his designate. The training and experience of the OSSCO shall be commensurate with the complexity of the work. The requisite training and experience requirements for the OSSCO are as follows:

J.2.1 The OSSCO shall be an individual responsible for Environmental, Safety and Health of the Seller's work at the Buyer's Site. The OSSCO shall demonstrate safety competency (both training and experience) for the type of work being performed, and shall have full authority and will be expected to stop work to effect resolution of an unsafe condition or act. This individual shall be subject to acceptance by the Buyer. This acceptance shall be determined via an oral interview based on the scope of work, anticipated hazards, and training and experience. An OSSCO (or assistant OSSCO) shall be present on site any time work is performed, including work by sub-tiers.

J.2.2 Prior to performing work at Buyer's Site, the OSSCO shall meet minimum Occupational Health and Safety educational and experience requirements, as follows:

J.2.2.1 Professional certification as a Board of Certified Safety Professionals (BCSP) - Certified Safety Professional (CSP) or an American Board of Industrial Hygiene (ABIH) - Certified Industrial Hygienist (CIH) or a BCSP/ABIH (Council on Certification of Health and Environmental and Safety Technologist - CCHST) - Occupational Health and Safety Technologist (OHST) - Certified Health & Safety Technologist (CHST), or other Buyer accepted certification programs.

J.2.2.2 Documented experience in safety inspection and coordination demonstrating knowledge in areas listed below. The OSSCO shall be knowledgeable of the following at a minimum:

- Principles & practices of industry and construction safety.
- Occupational safety and health regulations.
- Methods of assessing safety hazards and the effectiveness of controls.
- Hazardous material storage and transfer procedures.
- Specific health & safety technical areas, such as confined space entry, excavation work and lockout/tagout.
- Hazard recognition, mitigation, and control.
- Industrial Hygiene Program Requirements.
- Emergency preparedness activities.
- The provisions of this Specification S-12.
- Program / Process Self Assessment principles.

J.2.3 The OSSCO's roles and responsibilities shall, as a minimum, include:

- Be the Buyer's point of contact for ESH related items for the project.
- Certify the adequacy of the Seller's safety training and records.
- Establish and implement a confined space program for confined spaces within the project foot-print that are created in the execution of the contract.
- Work scope planning activities (e.g., the OSSCO will approve all Seller Safety Plans, permits, work procedures, prior to submittal to the Buyer).
- Coordinate the Seller's Job Site Hazard Analyses program.
- Participate in work specific briefings.

PART II: PRE-WORK REQUIREMENTS

- Observe work in progress (e.g., monitor all HRW). (The Seller shall provide inspection/finding records to the Buyer for review, upon request.).
- Coach workers in safe activities.
- Coordinate and perform Worker Hazard Awareness Training.
- Ensure unsafe conditions and practices are evaluated, corrected, reported to the Buyer, and documented.
- Coordinate full-time supervision of all HRW evolutions. (Supervision as coordinated with the Assistant OSSCO or competent person if not one in the same person.)
- Coordinate execution of the Seller's Industrial Hygiene Program, including respiratory protection.
- Coordinate conduct of contract self-assessment (SA), with formal reporting to the Buyer monthly. This SA is based on OSSCO review of inspection reports, lessons learned, and injury/illness reports to identify areas that require improvement. It will include a review safety performance strengths and weaknesses and include information-flow-down to sub-tier workers.

J.3 Assistant OSSCO

J.3.1 The Assistant OSSCO shall be approved by the Buyer.

J.3.2 Acceptable for periods when the primary OSSCO is not available (this should be for short periods required to cover illness, vacations & other unavoidable absences), or to augment monitoring of work in the field.

J.3.3. An Assistant OSSCO shall be an individual with knowledge of ESH regulatory requirements and ESH Management Systems. This individual should also possess leadership, guidance, and authority skills.

J.3.4 HRW (refer to EXHIBIT 6) shall not be performed until the designated OSSCO is present, unless the Buyer Representative concurs with the Assistant OSSCO overseeing the HRW.

K. ELECTRICAL SAFETY

K.1 The Seller shall ensure that all Seller personnel understand that it is the Buyer's policy **NOT** to perform work on, or work near (defined in K.2 below), energized electrical equipment or systems. In unusual circumstances, conditions may be such that there is no alternative but to work on, or work near, energized electrical equipment or systems. In these cases, this work is defined as HRW (See Part I, Section F) and Buyer authorization is required prior to beginning to plan the work (EXHIBIT 6A). Additionally, the Seller shall submit to the Buyer, for approval, an Energized Electrical Work Plan (EXHIBIT 14).

K.2 Work on, or work near, hazardous conductors is defined as breaking the plane of a panel that contains exposed energized conductors equal to or greater than 50 volts, or working within the restricted approach boundary as defined by NFPA 70E Article 130 – whichever is more restrictive. Verifying circuits de-energized is considered energized electrical work but does not require a written Energized Electrical Work Plan. Checking / verifying circuits de-energized requires the Seller personnel to invoke NFPA 70E Article 130 requirements for shock and arc flash hazards.

PART II: PRE-WORK REQUIREMENTS

- K.3 Seller personnel performing work on or near power transmission/distribution equipment or lines shall receive additional training as specified in 29 CFR 1910.269.
- K.4 Exterior overhead lines shall be treated as un-insulated lines, whether insulated or bare, until they have been assessed by an electrically qualified person and determined to be insulated adequately. Otherwise, the overhead line shall be protected by line hose or other voltage-rated supplementary barriers.
- K.5 Prior to using any insulated aerial lift for electrical work, the Seller shall demonstrate to the Buyer that the equipment meets the requirements of ANSI A92.2 (such as providing a copy of the ANSI certificate), and that electrical testing requirements have been completed, and that the electrical rating is clearly marked on the equipment.

L. LIFTING & HANDLING

All Seller lifting and handling operations shall be in accordance with the Supplemental Work Scope for Use of Weight Handling Equipment, provided in EXHIBIT 29

M. EXCAVATIONS

- M.1 An excavation is any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal. Excavation is work that includes penetration, digging, or material removal to a depth of greater than 12 inches in earth. For excavations 12 inches or less, the need for a permit shall be determined by the Buyer's Representative.

Note: Breaking and removal of walking and driving surface covers is not excavation.

Any excavation that is more than twelve (12) inches in depth from the surface of the ground shall require a permit. Excavation work that includes digging with power equipment within 3 feet of underground utilities containing potential hazardous energy, or when a person must enter an excavation 5 feet or more in depth, are defined as HRW and requires Buyer authorization (EXHIBIT 6A). Additionally, an Excavation Plan (EXHIBIT 16) is also required to accompany the Excavation Permit (EXHIBIT 23) whenever a person must enter an excavation greater than 5 feet deep. In addition to meeting OSHA requirements, the excavation plan shall identify the Seller's competent person, any shoring system used which also requires certification by a registered professional engineer (PE) or competent person and a sketch of the Excavation profile (benching and/or sloping).

- M.2 Sloping greater than 1:1-½ (V:H) requires a request from the Seller, signed by a Professional Engineering or by the Seller's competent person. The Seller shall allow ten (10) days for Buyer approval.
- M.3 If the excavation requires dewatering, a dewatering procedure for treatment of the water prior to discharge shall be provided to the Buyer for approval prior to use. The Buyer's Representative will coordinate Buyer approval. Dewatering shall be conducted in full compliance with all applicable Federal and State environmental regulations. Dewatering operations shall be inspected daily by the Seller to ensure proper operation. Conduits and protective covers shall be installed to protect dewatering lines from disconnection by motor vehicles passing over where such disconnections could result in muddy water entering storm drains. When changing dewatering system filters, covers shall be placed on all storm drains in the vicinity. Supply, operation, and maintenance of the dewatering equipment are the responsibility of the Seller.

PART II: PRE-WORK REQUIREMENTS

M.4 An engulfment hazard may exist when working in excavations 4 ft or more in depth, on pressurized (i.e., site service water, processed cooling water, pumped sanitary systems) or non-pressurized (i.e., storm sewer, gravity drained sanitary line) liquid systems with piping 1 inch or more in diameter. The Seller shall include engulfment as a hazard in their HAP(s) (see Part I, Section E). The following controls shall be utilized:

M.4.1 Pressurized Liquid Systems:

M.4.1.1 Work-On, or Suspected Break in the System – The system shall be de-energized (and drained, if possible) and locked/tagged out (LOTO) by the Buyer's Representative. Once the Seller's competent person identifies the excavation is acceptable for entry, the Seller shall control personnel entry into the excavation. All personnel entering the excavation, whether working on the system or not, shall apply their personal safety lock(s) and danger tag(s) to the system.

M.4.1.2 Subsequent to Repair – After a pressurized liquid system has been repaired a pressure/leak test will be performed. No personnel shall be allowed in the excavation during the test and visual inspections shall be conducted from outside the excavation. Once the testing has been successfully completed the controls of paragraph M.4.1.1 are no longer necessary. If leakage is detected during the test, then a hazard assessment shall be performed and LOTO may be required during repairs based on the hazards identified.

M.4.1.3 Hot Tap Operations – Hot tap operations are exempt from LOTO if the specific criteria in 29 CFR 1910.147(a)(2)(iii)(B) are fully met. Some hot tap operations may require a pressurized system in order to maintain cleanliness; however, if the system can be secured at the source, then it shall be LOTO to the extent practicable as determined by the Buyer's Representative.

M.4.2 Non-Pressurized Liquid Systems:

M.4.2.1 Make all reasonable attempts to prohibit or limit the introduction of any sources of liquid into the system (i.e., be aware of the potential for rain, notify site personnel to prohibit discharges, block upstream inlets, etc.).

M.4.2.2 Perform a hazard analysis as required per paragraph M.4. Based on the hazard analysis, LOTO may not be required.

M.5 Fall Hazard Mitigation around Excavations

M.5.1 Wells, pits, shafts, catch basins, manholes and similar openings 6 feet or more in depth and greater than 12 inches in the least horizontal dimension, shall be protected from falling by guardrail systems, fences, barricades, or covers. If it is impracticable to implement these controls then the fall protection requirements of 29 CFR Part 1926 Subpart M shall be followed. All temporary openings of this type shall be backfilled as soon as possible.

M.5.2 For excavations 6 feet or more in depth sloped or benched appropriately in accordance with 29 CFR Part 1926 Subpart P, fall hazard mitigation for excavation workers **is not required**.

PART II: PRE-WORK REQUIREMENTS

- M.5.3 Inspections of excavations by the Competent Person for stability, entering/exiting excavations via a ladder, directing (signal man) equipment operators during digging or lifting and handling operations, and similar visual observation tasks can be conducted without additional fall hazard mitigation provided the excavation remains visible.
- M.5.4 If the sloping and benching is not feasible, then the task specific HAP (see Part I, Section F.4) for the work shall specify the appropriate control mechanisms to protect the worker from an inadvertent fall into the excavation. These control mechanisms may include the use of rope barriers located a minimum of 6 feet from the excavation edge or guardrails.
- M.5.5 The Seller's work controls shall ensure that only authorized employees, who have specific functional responsibilities, can approach the edge of the excavation at any time. Authorized employees who have specific functional responsibilities shall remain at the excavation edge only for the time necessary to perform their duties. Authorized employees standing at the edge of an excavation shall not lean out or place their center of gravity over the edge of the excavation or step on/stand on the sides of the trench box or shield at any time.
- M.5.6 For work other than that described above (e.g., backfilling, manipulation of sheet piles, manipulation of tag lines, the installation/removal of a ladder, passing tools and equipment into/out of the excavation, monitoring of atmospheric conditions with a meter, etc.) performed at the edge of an excavation 6 feet or more in depth shall require definitive fall hazard mitigation actions as proposed by the Seller in the HAP and approved by the Buyer. Some examples which would meet this requirement are: (1) standing behind a sheet pile or other obstruction of similar height to a guardrail system which will prevent the employee from falling into the excavation; (2) using a short section of a guardrail system at the work location but not necessarily encompassing the entire excavation; or (3) limiting the scope of the work to walking from the rope barrier directly to the edge of the excavation, inserting a ladder and walking directly back.

At no time shall the installation and management of protective systems create a greater hazard to employees.

M.6 Overhead Hazards

- M.6.1 All Overhead Utilities and Interferences must be clearly marked on the Ground and the Excavation Permit must include the height of the Utility/Interference.

N. PENETRATIONS

Any boring, drilling, saw cutting or alteration of walls, floors or ceiling of existing or Buyer owned structures (i.e., "a penetration") requires a Penetration Permit (EXHIBIT 24) which shall be requested in advance of such operations. Penetration Permits are also required during demolition and/or remediation evolutions unless it is proven to be energy free (e.g., all electrical services to building air-gapped) at which point no permit is required. For penetrations during new construction and penetrations in existing structures less than two (2) inches in depth, the need for a permit, shall be determined by the Buyer's Representative. Alternatively for Roof work, the underside of the roof deck must be inspected prior to performing intrusive work on any roof. This requirement does not apply to Seller owned new work.

PART II: PRE-WORK REQUIREMENTS

O. POWDER OR BUTANE ACTUATED DEVICES

- O.1 Powder actuated and butane actuated tools are tools that use an explosive charge to drive studs, fasteners, or pins onto or into metal or other material objects. The Seller shall notify the Buyer at least ten (10) days in advance of bringing any powder or butane actuated devices on site. The Seller shall verbally declare to Security upon Site entry that a powder or butane actuated device is being brought on site. The devices and their loads shall be specifically declared on the Buyer's Property Pass when entering and exiting the site. Operators of these devices are required to use them in accordance with the manufacturer's requirements. A copy of the manufacturer's requirements shall be on site whenever the device is on site. These tools shall meet the requirements of ANSI A10.3 and 29 CFR 1910.243(d).
- O.2 Powder or butane actuated devices and their associated loads shall be controlled by the Seller at all times and shall be locked up when not in use. Powder or butane actuated devices and their loads shall be promptly removed from site when no longer being used by the Seller on the project.

P. RESTRICTED USE MATERIALS - RUMs (formerly SPECIFIC MATERIAL EXCLUSIONS)

Use of RUMs on site is prohibited unless otherwise approved by the Buyer.

2-Acetylaminofluorine	4 – Dimethylaminoazobenzene	Rodenticides
Acrylonitrile	Ethyleneimine	Thoriated tungsten electrodes
4-Aminodiphenyl	Ethylene Oxide	used for welding
Arsenic, inorganic	Formaldehyde	Trichlorofluoromethane
Asbestos	Freon TF (Freon 113)	Trichlorotrifluoroethane
Benzene	Hexane	Vinyl chloride
Benzidine	Hydrazine	
Beryllium	Ionization Type Smoke Detector	Ethers and Peroxides,
1,3 - Butadiene	Lead	including:
Bis-Chloromethyl ether	Lead-Based Paints	- Allyl ether
Bromochlorodifluoromethane	Mercury	- Benzoyl peroxide (exc.
Bromotrifluoromethane	Methyl chloromethylether	Hardeners, putties, etc.)
1,2 – Dibromo – 3	4,4' Methylene bis (2 –	- Collodion1,2,diethylene
Chloropropane (DBCP)	chloroaniline)	glycol ether
Cadmium Oxide	Methylene Chloride	- Diethyl ether
Carbon Tetrachloride	alpha – Naphthylamine	- Dimethyl ether
Chloroform	beta – Naphthylamine	- Dry gas (ether based)
3,3'- Dichlorobenzidine (and	4 – Nitrobiphenyl	- Ethyl ether
related salts)	N – Nitrozodimethylamine	- Isopropyl ether
Chlorine gas	Perchloroethylene	- Methyl ether
Chlorotrifluoromethane	(Tetrachloroethylene)	- Methyl ethyl ketone
Chromic Chloride - powdered	beta – Propiolactone	peroxide
Chromium (VI), (i.e. Hexavalent	Picric/Perchloric Acid & Salts	- Tetrahydrofuran
Chromium)	Rapid Tap Cutting Fluid	- Vinyl ether
Dichlorodifluoromethane		

PART II: PRE-WORK REQUIREMENTS

Q. CONFINED SPACE WORK

Confined Spaces (CS) include areas such as but not limited to tanks, vessels, reactor compartments, double bottom tanks, underground tanks, fresh water drain collecting tanks, sewers, boilers, pits, vents, and drains. The Seller's Confined Space Entry Program shall be in accordance with 29 CFR 1910.146; even though the scope and application of the standard states that it does not apply to construction. The Seller shall obtain a Permit Required CS Entry Permit (EXHIBIT 22A) or a Non-Permit Entry Form (EXHIBIT 22B) from the Buyer prior to entry into any existing space defined as a Permit Required CS or a Non-Permit CS, respectively. The Seller shall use Seller CS permits/forms when performing CS entry into newly established areas under construction. Buyer approval in writing is required to utilize Seller administered CS permits in these areas. The Seller shall evaluate any newly constructed spaces using the form (EXHIBIT 22C). The Seller shall maintain an inventory list of newly constructed confined spaces. The list shall indicate if each CS is still in existence. The list shall be provided to the Buyer upon request. The permits (both active and terminated) shall be available to the Buyer upon request.

Q.1 Two types of CS entry are recognized by the Buyer: Permit and Non-Permit. The Seller is responsible for complying with the Buyer's confined space entry program, and preparing confined space entry permits to be issued with Buyer's approval.

Q.2 Posting: In areas that appear to qualify as a confined space, absence of posting shall not be interpreted to mean that the area is not a confined space (e.g., manholes).

Permit Required Confined Space signs state [DANGER – CONFINED SPACE ENTER BY PERMIT ONLY].

Non-Permit Confined Space signs state [CAUTION – NON-PERMIT CONFINED SPACE KEEP OUT UNLESS AUTHORIZED].

Q.3 Permit Required Confined Space Entry shall comply with:

- The HRW requirements of Part I, Section F.
- EXHIBIT 22A (Confined Space Entry Permit).
- A process which "activates the permit" shortly after atmospheric testing. Entry should take place as close as possible to the timeframe atmospheric determinations are performed.
- Notification requirements - Prior to entry, the Seller shall establish positive communication from the jobsite to Buyer's Emergency Services at Knolls or Incident Prevention at the Kesselring Site (e.g., radio, cell phone). Also, the Seller shall establish a positive means of communication between the Attendant and personnel within the confined space.
- Atmospheric monitoring – If the Seller is intending to work in an existing Buyer Confined Space, the Buyer will perform atmospheric monitoring. Otherwise the Seller is responsible for monitoring. Monitoring will be performed prior to establishment of any engineering controls that could affect air quality, after engineering controls (to demonstrate the effectiveness of the controls), prior to entry and periodically thereafter to demonstrate the continued effectiveness of engineering controls.

Q.4 Non-Permit Confined Space (EXHIBIT 22B): Fits the definition of a confined space but lacks any inherent or introduced hazards. Entry shall include:

PART II: PRE-WORK REQUIREMENTS

- Atmospheric Monitoring – If the Seller is intending to work in an existing Buyer Confined Space, the Buyer will perform atmospheric monitoring. Otherwise the Seller is responsible for monitoring. Monitoring will occur prior to entry, and periodically thereafter to demonstrate the work activities have not had a negative effect on air quality.
- If activities performed within and/or in close proximity to the confined space will create additional hazards that will impact safeguards and entry procedures (i.e., idling vehicles nearby), the space shall be treated as a permit required confined space.

Q.5 Open topped spaces of more than four (4) foot in depth, such as pits, sumps, vaults, and vessels, and that have a limited or restricted means of entry or exit (i.e., use of a ladder) shall be considered to be confined spaces.

Q.6 Prior to being allowed to perform any confined space entry work into a Buyer owned CS, the Seller's Qualified Entry Supervisor (QES) shall be interviewed by Buyer's Safety Office and shall be placed on a list of QES maintained by the Site Safety Office. The Seller's request shall include the name of the QES and a certification statement that the individual has been trained in accordance with 29 CFR 1910.146(g). The interview will last approximately one (1) hour.

R. RESPIRATORY PROTECTION

R.1 The Seller shall obtain a Respirator Permit (EXHIBIT 21) from the Buyer prior to performing any work requiring use of a respirator.

R.2 The Buyer will issue a permit after verification of the following documentation to be submitted by the Seller:

R.2.1 Documentation showing formal training within the last 12 calendar months. The documentation shall include:

- the name of the respirator wearer(s),
- the manufacturer, model and type of respirator trained on,
- the date the training took place, and
- the authorized trainer's signature.

R.2.2 Documentation showing passing of a respirator medical evaluation to include the following:

- the name of the respirator wearer,
- recommendation on ability to wear respirator,
- the date of the evaluation, and
- a signature of a physician or Licensed Health Care Professional (PLHCP)

R.2.3 Documentation showing passing of a respirator quantitative fit-test within the previous 12 calendar months. The test shall include:

- the fit-test operators signature,
- the date of the fit-test,
- the wearer's name
- the overall fit factor (**passing criteria is 300 for half face, 1500 for full face**), and
- the manufacturer, model, type, and size of the respirator fitted.

R.3 The Seller's respiratory protection program shall be in accordance with OSHA 29 CFR 1910.134. A copy of the program shall be submitted to the Buyer for information.

PART II: PRE-WORK REQUIREMENTS

- R.4 The Seller shall provide certification that breathing air systems if used, meet as a minimum, the requirements of the specification for Grade D breathing air as required in ANSI/CGA Spec. G-7.1-1989.
- R.5 If the Seller elects to wear a dust mask, training documentation shall be provided and a Respirator Permit (EXHIBIT 21) shall be obtained from the Buyer before use.

S. ASBESTOS WORK REQUIREMENTS

If work is performed involving asbestos-containing materials, the requirements of EXHIBIT 10 of this specification shall apply.

T. CONCRETE DUST or CRYSTALLINE SILICA EXPOSURE CONTROLS

If work is performed involving concrete dust or other crystalline silica containing materials, a Silica Procedure (EXHIBIT 9) shall be submitted to the Buyer for approval at least ten (10) days prior to use.

Examples of this work shall include but are not limited to: Cutting/drilling asphalt, concrete, brick, block and plaster and mixing mortar/concrete/grout.

U. LASERS

All work using devices containing lasers of any class shall comply with ANSI Z136.1, "Safe Use of Lasers". The use of a written procedure (EXHIBIT 27) is required for the use of Class 3B and 4 lasers and will require concurrence from the Buyer. The procedure shall be submitted to the Buyer for approval at least ten (10) days prior to use.

V. METALS, AND PAINTS AND COATINGS

V.1 Metals

Metals, for example stainless steel, galvanized metals, and various alloys (not all inclusive), may contain toxic constituents such as lead, chromium, nickel, manganese, zinc and others. When work activities are performed on these materials such as hot processes (e.g., welding, burning, torch cutting), mechanical cutting, grinding, scraping, sanding, etc., the potential exists to create a hazardous environment for the worker or other nearby employees. The Seller shall ensure processes are established to maintain employee exposures below applicable exposure limits and to comply with associated regulatory requirements (e.g., the OSHA – 1926.1126 - Chromium VI Standard).

If the Seller determines that there is potential for exposure above an allowable exposure limit such that engineering, administrative, and/or PPE controls are necessary, a written work procedure (EXHIBIT 27) as described by S-12 Part II, Section E shall be required. The Seller is responsible for the rationale applied to make the exposure potential determination, as described in S-12 Part I, Section J.

V.2 Paints and Coatings

Many paints and coatings contain hazardous constituents such as PCBs, lead, chromium, nickel, cadmium, zinc and others. These materials shall be assumed to be present unless otherwise demonstrated by the Seller (e.g., MSDS's, sampling, etc.). If hazardous constituents are identified that

PART II: PRE-WORK REQUIREMENTS

have specific regulatory compliance requirements (e.g. PCB's, the OSHA Lead Standard, etc.) or create the potential for employee exposure above an allowable occupational exposure limit, the Seller shall ensure processes are established to maintain employee, or other nearby personnel exposures below applicable exposure limits and to comply with associated regulatory requirements. If the Seller determines that there is potential for exposure such that engineering, administrative, and/or PPE controls are necessary, a written work procedure (EXHIBIT 27) as described by S-12 Part II, Section E shall be required. The Seller is responsible for the rationale applied to make the exposure potential determination as described in S-12 Part I, Section J.

W. FUEL POWERED ENGINES-OPERATION INDOORS OR IN AREAS WITH LIMITED VENTILATION

Use of fuel-powered engines indoors or in outdoor areas where there is limited ventilation and/or near building fresh air intakes requires prior review and approval from the Buyer. If the Seller evaluates a specific area for use of fuel-powered equipment and determines it does pose an exposure risk, then the Seller shall submit a written assessment to the Buyer, for Buyer's concurrence. The Seller shall request approval at least ten (10) days in advance.

X. HEPA FILTER SYSTEMS

For radiological work, ventilation units and vacuum cleaners containing high-efficiency particulate air (HEPA) filters, if required by the contract, shall be dioctyl phthalate (DOP) tested, or the equivalent, before initial use, each time the HEPA filter is changed, or annually. Documentation of testing shall be provided to the Buyer prior to use of such devices.

For non-radiological work, ventilation units and vacuum cleaners containing HEPA filters, if required by the contract, the Seller shall provide the manufacturer's documentation of the system's and/or filter's efficiency upon Buyer's request.

Y. WASTE GENERATION AND MINIMIZATION

For contracts in which the Seller will be generating waste as part of the scope of subcontract work, (e.g., painting, scraping, etc.) the Seller shall submit a Seller Waste Process Evaluation List (EXHIBIT 11) for Buyer approval ten (10) days prior to start of work which delineates for each waste stream:

- the process generating the waste,
- the substances used in the process,
- the hazardous constituent(s),
- type of waste generated,
- special storage requirements,
- appropriate disposal path, and
- quantity expected to be generated

Z. MISCELLANEOUS PRACTICES

- Z.1 Entry into construction areas and assigned lay down areas shall be restricted by physical barriers and by appropriate signage (per 29 CFR 1910.145) on all sides of the area, or access to the area shall be controlled by a watch stander. Seller contact name, telephone number and entry requirements (e.g., PPE) shall also be posted.
- Z.2 Any modifications and/or repairs made to equipment involving safety devices or otherwise affecting safe operations shall offer the same protection as original construction, and shall use

PART II: PRE-WORK REQUIREMENTS

the manufacturers approved replacement parts. No modifications shall be made to any equipment that would affect the UL, NEMA or other required listing/labeling.

- Z.3 All materials shall be adequately secured, as approved by the Buyer, to prevent materials from blowing about. Particular attention shall be paid to elevated structures.
- Z.4 The Seller shall not perform any elevated work including work involving ladders, lifts, cranes, during windy conditions (wind speed or gusts in excess of 25 miles per hour), unless approved by the Buyer.
- Z.5 Seller personnel are required to obtain Buyer approval prior to entering, inspecting or otherwise conducting surveillance and/or work above all Buyer owned ceiling spaces in existing structures and facilities.
- Z.6 The Seller shall not commence with any hydrostatic or pneumatic testing until the Seller and Buyer reviews and signs pre-testing check sheet in accordance with the contract technical specification.
- Z.7 Precautionary postings and/or notifications may be warranted as directed by the Buyer for the safety of personnel in or adjacent to Construction Work Areas. An example of such a posting may be: "CAUTION - High Noise Area – No Loitering."

END OF PART II

PART III: DURING WORK REQUIREMENTS

A. PERIODIC REQUIRED REPORTS

- A.1 The provisions of this Section are applicable if the Seller and/or Seller sub-tier personnel are working on site for a period in excess of eight (8) hours per contract or purchase order, or has a job related injury/illness or property damage event.
- A.2 The Seller shall perform reporting/record keeping for on site occupational injuries/illness, motor vehicle accidents, or property damage events. All reporting/record keeping forms identified in the following sections will be reviewed for accuracy and completeness by the Buyer. Any discrepancies will be resolved with the Seller.
- A.3 The Buyer shall be notified of any occupational injury, illness, or accident as soon as possible, but no later than one (1) hour after the Seller becomes aware that the accident occurred.
- A.4 Each Seller is required to maintain occupational injury/illness, motor vehicle accidents, or property damage events records at the Site where on site work is performed. The forms to be used for this purpose are available from the Buyer, and are listed below:

A.4.1 OSHA Form 300, Log of Occupational Injuries and Illnesses

The OSHA Form 300 (EXHIBIT 1) is required to be used at Buyer Sites. The following information shall be written on the top left corner of the Form 300:

- Company name
- Number of man-hours worked for the month on site
- Applicable month/year
- Seller's representative signature

First Aid cases are not recordable and shall not appear on the Form 300. The completed OSHA Form 300 shall be provided to the Buyer by the third (3) workday following the end of a calendar month when on site work is performed. If no occupational illnesses and injuries are reported, the statement "No Recordable Occurrences" shall be written on the form. If no on site work is performed during a particular calendar month, the Form 300 is not required. If contracted work is completed prior to the end of a calendar month, a copy of the completed OSHA Form 300 is required to complete the subcontract work.

A.4.2. Occupational Injury/Illness, Property Damage or Motor Vehicle Accident

The DOE Form F 5484.3 (EXHIBIT 2) is a multiple use form, used for:

- Occupational Injury/Illness recorded on OSHA Form 300
- Motor vehicle accidents involving government-owned, -rented, or -leased vehicles
- Property damage or occurrence resulting in damage

A completed DOE Form 5484.3 shall be submitted within three (3) workdays of an occupational injury/illness. For reporting property damage or motor vehicle accidents, the form shall be submitted concurrent with the OSHA Form 300.

- A.5 Failure to report under the provisions of this section may result in suspension of work, at no additional cost to the Buyer, as determined by the Buyer.

PART III: DURING WORK REQUIREMENTS

B. PHYSICAL CONDITION

- B.1 The Seller shall ensure that their employees are physically able to safely perform work within any limits caused by a temporary or permanent physical (medical) condition or limitation.
- B.2 The Seller shall have any of their personnel report to the Buyer's Representative prior to undergoing any medical treatment or testing with radioisotopes.

C. SELLER VEHICLES

- C.1 All Seller's vehicles that are designed and manufactured for over-the-road transportation and are to be used on Buyer's Sites shall be currently registered, licensed, and inspected in the state of origin or any other state, if applicable. This does not apply to heavy equipment (see Part II, Section C).
- C.2 All Seller's vehicles and equipment, and the vehicles of their employees, shall be in good working condition and shall be free of known leaks. The Buyer reserves the right to deny any vehicle access to the Site if the vehicle is in poor condition, as determined by the Buyer.
- C.3 In the event that a Seller vehicle or equipment leaks or spills any type of hazardous material (e.g., hydraulic, lube, or transmission oils; gasoline, diesel fuel, anti-freeze), Buyer Emergency Services (Incident Prevention at Kesselring) shall be notified immediately. The leak and/or spill shall be contained, and the vehicle or equipment shall be removed from Site property and not returned until permanent repairs have been made. All required regulatory notifications will be made by Buyer.
- C.4 All vehicles and equipment shall be parked on a non-permeable surface (i.e., asphalt, concrete, plastic, etc.), unless the work requires such vehicles and equipment to be located otherwise, and only when actually performing the work.
- C.5 Inspection of all Seller vehicles and equipment shall be performed each day prior to use to ensure no fuel, oil, hydraulic fluid or antifreeze leaks; or faulty equipment.
- C.6 If Seller's vehicles or equipment remain on site during non-working hours they shall be located in an area approved by the Buyer's Representative. Additionally, seller vehicles or equipment that is parked within the security fence shall be identified with a visible marking of the company name and be capable of being relocated in an emergency situation.
- C.7 If Seller's vehicles or equipment is located on Buyer's property but outside the security fence they shall be within view of security and be rendered inoperable to unauthorized persons by using one of the following precautions:
 - C.7.1 Doors and ignition shall be locked. Keys shall be tagged with equipment identification data and turned over to the Buyer's Representative for safekeeping.
 - C.7.2 Mechanical equipment that is not key-operated shall be moved inside the security fence. Mechanical equipment that cannot be moved without significant work delay shall be rendered inoperable and may be left in its location provided prior approval is obtained from the Buyer's Representative.

PART III: DURING WORK REQUIREMENTS

- C.8 Per the requirements of 6 NYCRR 217-3, all operators of gasoline or diesel powered vehicles with a gross vehicle weight rating of 8,500 pounds or greater while on Buyer's property shall not allow engines to run idle for more than five minutes. The following conditions are exceptions to this prohibition: when due to traffic conditions (e.g., clearing the Security gates); when running the engine is required to operate vehicle ancillary equipment (e.g., a refrigerated trailer - cab air conditioning); or when diesel fueled trucks must remain motionless for greater than two hours when the ambient temperature is continuously below 25 degrees F.

D. COLOR CODING

- D.1 The color of yellow either separately or in combination with magenta (purple), is used at Buyer Sites to identify areas, materials, or tools that are controlled for radiological reasons. Marking items by painting a tool yellow, or using materials like yellow colored bags or sheet when not associated with the Radiological Control Program, can result in personnel taking actions to control this material as if it were radioactive. This can cause unnecessary concern among personnel and inefficient use of time and resources.
- D.2 Items or tools that are manufactured with the color yellow are permitted such as rain gear and tarpaulins, but whenever practical, alternate colors should be chosen. Yellow shall continue to be used to designate caution and for marking physical hazards per 29 CFR 1910.144, such as guarding, bollards, guardrails, and other safety equipment. Yellow/black safety rope and tape shall be used to barrier off hazardous conditions.

E. WINTER CONDITIONS

Snow and ice removal and sanding shall be performed by the Seller for all Seller platforms, scaffolds, laydown areas, and other walking and working surfaces used for access by the Seller. Use of any material besides sand or dirt for "sanding" shall be approved by the Buyer prior to use.

F. LOCKOUT/TAGOUT (LOTO)

- F.1 The Seller is responsible to comply with all LOTO requirements specified by 29 CFR 1910.147, 145 and 29 CFR 1910 Subpart S during construction, even though the OSHA Standard exempts construction from these requirements.
- F.2 If an energy isolation device is capable of being locked out, the Seller shall use a key operated lockout device. After a lockout is complete, the appropriate tag shall also be placed on the controlling device to identify the need for the lockout. The name of the person attaching the lockout device tag, and the name of the company he/she represents shall be identified on the tag.
- F.3 If an energy isolating device is not capable of being locked out, the Seller shall utilize a tag out system as approved by the Buyer and include additional precautions to provide an equivalent level of safety as available from the use of lockout, and the use of this tag out system shall be considered HRW as described in Part I, Section F. Tags shall be attached using nylon cable ties, or the equivalent, having minimum release strength of fifty (50) lbs.
- F.4 A red "Danger" tag prohibits operation of equipment until the tag is removed. Specifically, the red "Danger" tag is used when persons are actually working on the equipment or when operation of the equipment will seriously endanger personnel. A red "Danger" tag shall not be used for equipment protection.

PART III: DURING WORK REQUIREMENTS

- F.5 The Yellow/Black “Caution - Do Not Operate” tag or Blue tag used by the Buyer indicates a precautionary condition and is normally used to prevent operation or use of malfunctioning equipment which may create equipment damage and/or a safety hazard if operated or used.
- F.6 The Seller shall not operate any existing equipment; connect into any piping, electrical service, etc., to which a Buyer red tag and/or lockout device is attached.
- F.7 The Seller shall not install a LOTO on a Buyer system/equipment until the Buyer has first established control of the system/equipment, except when the system is completely turned over to the Seller and documented by the Buyer’s Representative.
- F.8 For purposes of electrical LOTO, the Seller may operate circuit breakers, disconnect switches, and other energy isolating devices as authorized by the Buyer’s Representative, but may not install a LOTO until after the Buyer’s Representative has established control of the system.
- F.9 The Seller shall submit a written energy control procedure, in accordance with 29 CFR 1910.147(a)(4), to the Buyer, for approval, prior to performing any LOTO activities on Seller owned systems/equipment, or on Buyer’s systems/equipment that have been completely turned over to the Seller (see Part III, Section F.7). A sample written energy control procedure format is provided in EXHIBIT 30. For any LOTO activities on existing Buyer owned systems/equipment which has not been turned over to the Seller, the Seller shall request a written energy control procedure from the Buyer, at least two (2) days in advance of the anticipated need.
- F.10 The Seller shall place his/her own “Danger” tags and/or locks in addition to tags and/or locks placed by the Buyer. Seller personnel are required to use multiple tags and/or locks (i.e., over tag and lock by each employee working on the system/equipment) when more than one person is working on the same system. Selection of tags to be used by the Seller shall conform to OSHA requirements and/or may be provided for use by the Buyer.
- F.11 When the Seller’s job involves work on a Kesselring Site plant-controlled system that requires energy isolation, Plant personnel shall apply necessary tags. Buyer acknowledgement of the equivalent/alternate LOTO process for work involving Kesselring Site plant-controlled systems is addressed via Buyer generated EXHIBIT 19 and involves the OSSCO/OSSR and the Buyer’s Representative. Ten (10) day advance notification is required.
- F.12 Seller’s may use a group lock out to perform LOTO of machines and equipment. When doing so, the Seller shall follow a procedure for group LOTO in accordance with 29 CFR 1910.147.

G. FIRE PROTECTION

G.1 Flammable and Combustible Liquids and Materials

- G.1.1 Flammable and combustible liquids shall be stored in or dispensed from safety cans or containers which are approved by Factory Mutual or Underwriters Laboratory. The container shall have a maximum of five (5) gallons capacity, with a flash-arresting screen at each opening (fill and dispensing), spring-closing lid and spout cover, and be so designed that it will safely relieve internal pressure if subjected to heat. Flammable liquids or combustible liquids which are viscous and extremely hard to pour may be used and handled in original shipping containers as approved by the Buyer. Liquids that are required to be chemically pure may remain stored in the manufacturer’s receptacle (normally a one (1) pint glass bottle).

PART III: DURING WORK REQUIREMENTS

G.1.2 All flammable or combustible materials shall be stored a minimum of ten feet from all buildings in a neat and orderly manner. Approval of the storage area location will be coordinated by the Buyer's Representative and will be initially indicated on the MSDS approval form (EXHIBIT 5).

G.2 Hot Work Permits

G.2.1 The Seller shall use Hot Work Permits (EXHIBIT 20) or equivalent when performing "Hot Work" in construction sites that are established in support of new building construction. Buyer approval in writing is required to utilize Seller administered Hot Work Permits in these areas.

For all other work areas, the Seller shall obtain an approved "Hot Work Permit" from the Buyer's Representative prior to use of any open flame, heat or spark producing device.

G.2.2 The Seller shall provide fire extinguishers of the appropriate class and size for work identified on the Hot Work Permit. Only those persons who are trained on the use of fire extinguishers may use them.

G.2.3 A fire watch, provided and trained by the Seller, shall have no other duties while on fire watch.

G.2.4 A fire watch is required for all hot work. In addition, multiple fire watches for the same operation is required when barriers do not adequately prevent hot work from affecting a lower level or when one fire watch cannot adequately observe all areas affected by the hot work.

G.2.5 The time period for maintenance of a fire watch as stated in 29 CFR 1926.352 shall be a period of at least thirty (30) minutes after the work ends unless otherwise indicated and approved on the Hot Work Permit.

G.2.6 Emergency Services & Systems (Knolls Site) and Incident Prevention (KSO) must review and approve Hot Work Permit (EXHIBIT 20) before any hot work begins.

H. COMPRESSED GAS CYLINDERS

H.1 The Seller shall ensure cylinders of compressed gases are not stored inside buildings on Buyer's Site overnight without prior Buyer approval.

H.2 Compressed gas cylinders shall be stored in the upright position, unless designed by the manufacturer for horizontal storage (e.g., propane cylinders on fork trucks). Cylinders shall be secured using metal collars, bars, chains, wire rope or other non-combustible method of securing.

H.3 Oxygen and fuel-gas cylinders, whether or not they are secured on a welding cart, shall be considered in storage unless they are used at least once per week. Rigs for which no Hot Work Permit has been issued, or rigs on which the regulators have been removed, shall be considered in storage. For multiple rig usage, each rig shall be identified and specified by the Seller on the Hot Work Permit.

PART III: DURING WORK REQUIREMENTS

I. ELECTRICAL SAFETY

- I.1 Seller work shall be performed on electrical equipment and lines only while these equipment and lines are de-energized as defined in Part II, Section K, unless approved by the Buyer in response to a submitted Energized Electrical Work Plan (EXHIBIT 14). In the event that energized equipment previously treated as de-energized is discovered, or unexpected exposed electrical wires are discovered in a Seller work area, the Seller shall immediately stop work and notify the Buyer's Representative.
- I.2 Temporary power will be provided by the Buyer. All connections and service extensions shall be furnished by the Seller. Temporary power shall be de-energized by the Seller at the end of the work shift unless specifically approved by the Buyer's Representative.
- I.3 All portable electrical tools shall be of the grounded or double insulated type and shall be listed or labeled by a nationally recognized independent testing laboratory.
- I.4 Ground fault circuit interrupters (GFCI's) shall be used on all receptacle outlets and temporary lighting circuits in construction areas. GFCI's shall be tested daily prior to use.

J. ELEVATED WORK

- J.1 The Seller shall use a Fall Protection system whenever work is performed at six (6) feet or more above the next lower surface. Whenever a fall protection system is to be used the work is HRW and Buyer authorization (EXHIBIT 6A) is required. Additionally, an Elevated Work Procedure (EXHIBIT 15) and sketches, drawings, photos and fall distance calculations shall be submitted by the Seller for Buyer approval twenty (20) days prior to the start of work.
- J.2 A positive means of fall protection is required whenever working within six (6) feet from an unprotected edge where there is a potential fall of six (6) feet or more, or where the potential exists for the worker to be drawn within six (6) feet from an unprotected edge. An unprotected edge is one which does not have a barrier at least 39 inches high and is capable of withstanding a 200 pound force. Personal fall arrest systems, guardrail systems, safety net systems, positioning device systems, restraint systems or a combination of these systems are considered a positive means of fall protection.
- J.3 For work done more than six (6) feet from an unprotected edge, a warning line system together with a safety monitoring system may be used as fall protection to ensure workers do not go within six (6) feet from an unprotected edge.
- J.4 In cases where it is not practicable to perform work in accordance with J.2 or J.3 and
 - workers would not be allowed within six (6) feet from an unprotected edge, and
 - there is no handling of equipment or operations which could draw a worker within six (6) feet of an unprotected edge, and
 - the least roof dimension is less than or equal to 50 feet,

Then, a safety monitor alone or a warning line system alone may be used in accordance with 29 CFR 1926 Subpart M, as approved by the Buyer's Safety Office.

- J.5 "Controlled Access Zones" are not allowed.

PART III: DURING WORK REQUIREMENTS

- J.6 Body belts are not allowed.
- J.7 Climbing on ducts, pipes, structural members, or similar equipment is prohibited, unless otherwise authorized by the Buyer.
- J.8 Metal ladders are prohibited.
- J.9 Extension ladders shall be tied, blocked, or continuously footed when in use.
- J.10 The use of opaque or semi-opaque barriers, such as drop cloth used in painting is prohibited when the barrier is to be suspended between the worker(s) and the surfaces below.
- J.11 The Seller shall submit an Elevated Work Procedure (EXHIBIT 15) to the Buyer, for approval, twenty (20) days prior to any scaffold erection and disassembly work where there is a potential fall of six (6) feet or more.

K. AERIAL LIFTS & ELEVATING PLATFORMS

- K.1 Whenever aerial lifts are to be used in the performance of work, a stand-by person shall be readily available at ground level to assist the lift operator or other means of positive communication shall be available. Any person assigned primary or stand-by responsibility for aerial lift operation shall be qualified to operate the device. Aerial lifts include vehicle mounted elevating and rotating work platforms such as aerial ladders, extensible boom platforms, articulating boom platforms or a combination of any of these devices. Vertical scissor lifts do not require a ground person.
- K.2 The Seller shall maintain clearance distances from overhead electrical lines in accordance with EXHIBIT 7.
- K.3 A secondary form of fall protection shall always be used when operating aerial lifts. Sellers shall provide appropriate secondary forms of fall protection (self-retracting lifeline/lanyard or restraint device) when using aerial lifts on Buyer's Sites. A six foot shock absorbing lanyard may not be used for this purpose at heights of less than 18 ½ feet, unless a qualified person has designed the system or the aerial lift manufacturer specifically calls for that component to be used.

L. WORK AUTHORIZATION/WORK RELEASE

- L.1 All work to be performed by the Seller will be reviewed and released in accordance with the Work Authorization/Work Release (Exhibit 33) process defined in Part I Section A.4.4. Additionally, all electrical work and all work involving LOTO will require a more specific work review and work authorization prior to performing these work tasks. These specific work reviews, for example, shall require the Seller to demonstrate to Buyer that they have completed a detailed field review of the work site conditions, that they have performed a detailed review of the specifications and drawings which describe/support the work evolution, and that they have a clear understanding of the work to be accomplished and the work controls invoked. The Seller should plan approximately up to one hour for these specific work reviews.
- L.2 Changed Condition/Emergent Work – Work not previously reviewed and released shall not be performed unless documented by the Seller for Buyer approval prior to the work activity taking place.

PART III: DURING WORK REQUIREMENTS

M. TEMPORARY SYSTEMS CHANGE, CONDITION OR MODIFICATION

If during the course of work any "Temporary" systems change or modification of existing systems shall be reviewed and approved by the Buyer's Representative. Examples include: closing or obstructing doorways and travel paths – including postings to same, connection to existing water supply and drains in support of construction activities, vehicular traffic access, or special use lay down areas.

N. IONIZATION TYPE SMOKE DETECTORS & SMOKE ALARMS

- N.1 Special attention must be paid to the handling of ionization type smoke detectors and smoke alarms containing Americium 241. In the event that the Seller discovers an ionization type smoke detector or smoke alarm that is not identified in the subcontract documents, the Seller shall cease work and immediately (prior to removal) notify the Buyer Representative's.
- N.2 The Seller shall not bring any ionization type smoke detector or smoke alarm onto the Buyer's Site without prior notification of the Buyer's Representative. Ionization detectors not for use at the Buyer's Site shall not be brought on Site.
- N.3 The Buyer's Representative will coordinate proper labeling, handling and inventory tracking of these smoke detectors as they are brought on site.
- N.4 An ionization detector that is removed from service temporarily to be reinstalled may remain in the immediate work area if the detector is constantly controlled by the Seller or a Buyer Representative. Otherwise, the detector shall be turned over to the Buyer's Radiological Controls personnel.

END OF PART III

PART IV: LIST OF APPLICABLE MANDATORY STANDARDS

All applicable laws and regulations promulgated under these laws shall be complied with. This shall include state laws and regulations, in states with authorized programs.

A. Environmental Protection

- (1) The National Environmental Policy Act (NEPA)
- (2) Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA)
- (3) Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)
- (4) Pollution Prevention Act of 1990
- (5) Clean Air Act (CAA)
- (6) Resource Conservation and Recovery Act of 1976 (RCRA)
- (7) Federal Water Pollution Control Act, as Amended by the Clean Water Act of 1977
- (8) Oil Pollution Act of 1990 (OPA)
- (9) River and Harbors Act of 1899
- (10) Safe Drinking Water Act
- (11) Endangered Species Act
- (12) Fish and Wildlife Conservation Act of 1980
- (13) Toxic Substances Control Act (TSCA)
- (14) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- (15) Title 49 CFR 170 et. al "Hazardous Materials Regulations" (DOT)
- (16) Clean Water Act (CWA)
- (17) NYSDEC Regulations

In addition, the mandatory standards listed below are a matter of DOE policy for which Construction Safety conformance is also required. Unless otherwise specified, the most current edition of these standards applies.

B. Fire Protection

- (1) "National Fire Codes" (NFPA).
- (2) DOE/EP-0108, "Fire Protection of AEC Electronic Computer Data Processing Systems".
- (3) "Product Directories of Underwriters Laboratories", together with the periodic supplements (UL).
- (4) "Factory Mutual Approval Guide" (FM).
- (5) DOE-STD-1088-95, "Fire Protection for Relocatable Structures".
- (6) New York State Building Code/New York State Fire Code

C. Occupational Health Protection – Industrial Hygiene

- (1) "TLVs & Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs)
- (2) ANSI Standard Z136.1 "Safe Use of Lasers"
- (3) Title 10 CFR Part 850, "Chronic Beryllium Disease Prevention Program"

D. Occupational Safety

- (1) General Safety
 - (a) ANSI Standards, as applicable.
 - (b) "Forest Service Safety Standards" (USDA).
 - (c) Title 29 CFR 1910, "Occupational Safety and Health Standards (OSHA)
 - (d) Compressed Gas Association (CGA), Pamphlets P-1 and P-12
 - (e) US Army Corps of Engineers Manual, EM 385-1-1

PART IV: LIST OF APPLICABLE MANDATORY STANDARDS

- (2) Construction Safety – Title 29 CFR 1926, “Safety and Health Regulations for Construction”
- (3) Crane Safety
 - (a) ANSI B-30 Series (ANSI), Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks and Slings.
 - (b) Specification No. 70, Crane Manufacturers Association of American (CMAA).
- (4) Electrical Safety
 - (a) 29 CFR 1910
 - (b) NFPA 70E, Standard for Electrical Safety in the Workplace, Arc Flash Hazards, (Sections 110.8 (B) (1) (b), 130.3 and 130.7)
 - (c) NFPA 70, National Electrical Code (NEC).
- (5) Explosive Safety
 - (a) DOE M440.1-1, DOE Explosives Safety Manual (formerly DOE/EV 06194-1).

E. Transportation Safety

- (1) “Motor Carrier Safety Regulations”, Federal Highway Administration (DOT).
- (2) “Manual on Uniform Traffic Control Devices for Streets and Highways”, Bureau of Public Roads (DOT).
- (3) ANSI D7.1, “Inspection Requirements for Motor Vehicles, Trailers and Semi-trailers Operated on Public Highways” (ANSI).
- (4) “Uniform Vehicle Code” (NCUTLO).
- (5) “A Policy on Geometric Design on Rural Highways” (AASHTO).

END OF PART IV

PART VI: EXHIBITS REQUIRED BY S-12

SUBMITTALS REQUIRED

The purpose of this section is to assist the Seller in planning work evolutions that require submittals. The third column provides a brief description of the type of documentation required. In all cases, the appropriate Specification section, referenced in column 1 should be consulted to ensure a clear understanding of the requirements. All documentation shall be signed and submitted to the Buyer's Representative unless otherwise indicated.

Notes: (1) Unless otherwise specified, the standard cycle time for the review and approval of S-12 submittals is ten (10) working days.

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
GENERAL			
I.B.2	When the Seller's or the lower-tier's work force includes on site employees not able to read or comprehend English.	Written notification to the Buyer's Representative	Prior to the employees' start of work on site.
I.B.3	Worker training/qualification (including sub-tiers).	Documentation of worker training/qualification for the particular operation/work to be performed under the contract. Documentation shall be made available for review as a part of any permit application, written procedure, or upon request (within 24 hrs).	Prior to employees performing that particular operation/work.
I.B.4	When a Seller's employee demonstrates a lack of requisite environmental, safety, or health knowledge, understanding, or skill.	Written notification of retraining.	Prior to allowing the affected employee to perform any further work associated with the area of deficiency.
I.C.3	Site Indoctrination and Worker Hazard Awareness Training	Seller's process description to provide assurance workers are knowledgeable of requirements governing on site work.	Prior to performing work on site.
I.E.1	Each project	<u>Project specific</u> HAP which identifies each work evolution for the entire job, all foreseeable hazards and any planned protective measures to mitigate those hazards (EXHIBIT 18).	Prior to the start of work on site.
I.F.1	High Risk Work	Documentation packages (e.g., Plans, Authorizations, & Work Procedures, Briefing Sheets, Permits - EXHIBITS 6A & 6B)	Prior to performing the work.
I.F.4	Seller operations involving HRW (energized electrical work, elevated work, excavations, permit required confined spaces, diving operations, blasting, building demolition, welding/burning operations, use of lasers, crane operations, etc.) or unusual hazards.	<u>Task specific</u> HAP which identifies each work evolution associated with the HRW task, all foreseeable hazards and any planned protective measures to mitigate those hazards (EXHIBIT 18).	Ten (10) days in advance of the expected need.
I.H	Weekly Inspections (Service Contracts), or Daily Inspections (Construction Contracts)	Documentation of weekly (Service) or daily (Construction) inspections of the Seller's work operations, facilities, and equipment to assure compliance with all applicable State, Federal and local regulations.	Documentation records of all inspections shall be maintained and be made available for review, upon Buyer request.

PART VI: EXHIBITS REQUIRED BY S-12

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
I.J.2	Employee exposure monitoring.	Documentation of monitoring results.	As soon as possible following monitoring event.
I.M	Seller to require space on site for use as a lay down area, or for location of a portable office trailer or accumulation of material.	Written request for space allocation from the Buyer's Representative.	Ten (10) days in advance of the expected need.
I.N	Seller Generated Waste	Waste Process Evaluation List (EXHIBIT 11)	Prior to generation
I.N.1.7	Other controlled waste	Waste Process Evaluation List (EXHIBIT 11)	Prior to generation
I.N.2.1.1.1	Generation of waste from construction and demolition activities where the contract technical specification requires the Seller to remove it from site for disposal / recycling.	Waste Management Plan, for approval, including: Waste Identification, Waste Reduction Work Plan, and Name of Seller's Waste Management Coordinator.	Immediately after award.
I.N.2.1.1.2	Generation of waste from construction and demolition activities where the contract technical specification requires the Seller to remove it from site for disposal / recycling.	Written letter stating the name and address of the disposal facility, and a copy of the appropriate permit(s) and user's agreement(s) from the initial transfer station (if applicable) and the ultimate disposal facility, for approval. (EXHIBIT 28)	Immediately after award.
I.N.2.1.1.3	Generation of waste from construction and demolition activities where the contract technical specification requires the Seller to remove it from site for disposal / recycling.	Written letter stating the name and address of the recycling facility, copy of the appropriate permit(s), and a written certification statement that the product will be recycled and that the facility will accept Buyer's material, for approval. (EXHIBIT 28)	Immediately after award.
I.N.2.1.1.4	Generation of waste from construction and demolition activities where the contract technical specification requires the Seller to remove it from site for disposal / recycling.	Name and address of the transporter(s), and a copy of the New York State 6NYCRR Part 364 Transporter's permit(s), for information.	Immediately after award.
I.N.2.1.2	Generation of waste from construction and demolition activities where the contract technical specification requires the Seller to remove it from site for disposal / recycling.	Report the quantity (cu. yds and tonnage) of material removed from site each month broken down into two categories as follows: (1) C&D debris, and (2) recycled material (i.e., scrap metal, concrete, asphalt, etc.).	Monthly, within five (5) workdays from the end of the calendar month.
I.O.2	Temporary connection to Buyer's services (water lines, sewers, ventilation ducts etc.).	Written work procedure specifying purpose and duration of connection and any controls on the connection (EXHIBIT 31A, B and C).	Ten (10) workdays prior to establishing the connection.
I.P.6	Construction sites that disturb more than one (1) acre of soil.	Signed copy of Storm Water Pollution Prevention Plan (SWPPP) certification page.	Ten (10) days prior to starting any soil-disturbing activity
I.R.4	Work on refrigerant systems.	Copy of technician's license.	Ten (10) days prior to start of work.

PART VI: EXHIBITS REQUIRED BY S-12

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
I.S.2	All work at Buyer Sites where Subcontractor employees report they were, or believe they may have been, exposed to airborne beryllium at Buyer's or another DOE Site.	Questionnaire About Exposure to Airborne Beryllium at a Department of Energy Site and Summary of Beryllium Exposure History Survey (EXHIBIT 13).	Prior to start of on site work by each employee who is expected to work at Buyer Sites on five (5) or more days under the contract. For other employees, they have up to ten (10) days after having worked the fifth day to submit required documentation. This submittal is not required if all Subcontractor employees report no history of beryllium exposure at a DOE Site.
I.S.3	Work in beryllium restricted-access area with potential for exposure to airborne beryllium.	Procedure describing exposure controls and Beryllium Work Permit (EXHIBIT 26)	Ten (10) days prior to performance of work.
I.T.1	Petroleum Transfer Operation	Submit Petroleum Transfer Operation Procedure, for approval	Ten (10) days prior to performance of the transfer.
I.U.1 & 2	Application of pesticides.	Proof of NY State license.	Prior to application.
PRE-WORK			
II.A	All subcontracts, unless specifically excluded in the bid specification.	Written Contract-Specific Safety Plan (CSSP) to Buyer, for information.	Immediately after award.
II.C	Use of major equipment.	Major Equipment Declaration form (EXHIBIT 17) for each piece of major equipment.	Ten (10) days before use of equipment
II.D	Any of the permit processes listed below: <ul style="list-style-type: none"> - Hot Work, use of flame, heat producing or spark producing device - Use of respirator - Permit-required / Non-permit Confined Space - Excavation - Penetration - Asbestos removal/disposal/handling - Energized electrical work - Elevated work - Work in beryllium restricted-access areas 	Request & obtain the required internal permit/plan applicable to the specific process. Prior to the request for an internal permit/plan, meet with the Buyer's Representative to ensure that the latest permit form is used, as well as, to ensure understanding of all of the supporting documentation that is required.	Ten (10) days before start of work evolution, with exception to Excavation Permit/Plan and Elevated Work Procedure which are twenty (20) days.

PART VI: EXHIBITS REQUIRED BY S-12

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
II.E	Work with hazardous materials or physical agents that requires any of the following: <ul style="list-style-type: none"> - Engineering controls - Respiratory protective equipment - Workplace exposure measurements Examples include work such as cutting, or grinding operations on concrete, painted surfaces or metal surfaces.	Procedure (EXHIBIT 27) describing: <ul style="list-style-type: none"> - Event sequence - Exposure controls - Past experience with procedures - Training - Respiratory protective measures - Workplace measurements to be performed 	Ten (10) days before start of work evolution.
II.F.1 & 2	Obtain Seller approval prior to bringing II.F.1&2 defined substances on site.	EXHIBIT 5 for materials to be used on site and a Material Safety Data Sheet (MSDS) for all material brought on site.	At least ten (10) days prior to bringing material on site.
II.G.2	Any Seller operation that may require a State or Federal permit.	Information required by to support permit application.	During bid process.
II.G.2.2	Operation of temporary internal combustion power generating equipment on site.	Notify Buyer's Representative of the need, horsepower rating of the equipment and expected duration. Maintain logs of hours of operation.	Ten (10) days prior to expected need.
II.H	Emergent issues requiring regulatory notification.	Notify Buyer's Representative and provide information requested by the Buyer to support regulatory notification.	Immediately upon identification of the issue.
II.J.1.4	Designate an On Site Safety Representative (OSSR).	Proposal/Nomination/list on Seller's company letterhead.	During bid process.
II.J.2 & 3	Designate an On Site Safety Compliance Officer (OSSCO) and Assistant OSSCO.	Submit the resume of the OSSCO candidates.	During bid process.
II.J.2.3	OSSCO's contract self-assessment (SA).	Submit contract SA report.	Monthly
II.K.1	Work on energized electrical systems.	Energized Electrical Work Plan (EXHIBIT14)	Ten (10) days prior to the start of work.
II.K.5	Use of an insulated aerial lift (bucket truck) for electrical work.	Demonstrate that the equipment meets the requirements of ANSI A92.2 (i.e., ANSI certificate, electrical testing complete and electrical rating clearly marked on the equipment).	Prior to use.
II.M.1	Any excavation >12" in depth.	Plan to address compliance with 29 CFR 1926 Subpart P (Excavation Permit - EXHIBIT 23).	Twenty (20) days prior to beginning excavation work.
	Any excavation >5' in depth where personnel must enter.	Excavation Plan (EXHIBIT 16) signed by professional engineer or competent person.	Ten (10) days prior to beginning work in an excavation.
II.M.2	Slope greater than 1:1 ½ for excavation.	Request for a deviation on the Excavation Permit, signed by a "competent person" or Professional Engineer.	Ten (10) days prior to beginning excavation work.
II.M.3	Dewatering an excavation.	Dewatering procedure including method for treatment of water prior to discharge.	Prior to dewatering excavation.

PART VI: EXHIBITS REQUIRED BY S-12

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
II.N	Penetrations in walls, floors and ceilings.	Notification of the Buyer's Representative and a Penetration Permit (EXHIBIT 24).	Ten (10) days prior to beginning work.
II.O	Use of powder or butane actuated devices.	Notify Buyer's Representative - Operator shall carry card indicating ANSI A10.3 training.	Ten (10) days prior to bringing on site.
II.Q	Confined Space Entry	Confined Space Entry Permit (EXHIBIT 22A) or Non Permit Confined Space Entry Form (EXHIBIT 22B), and Confined Space Evaluation Form (EXHIBIT 22C) for Seller owned confined spaces.	Ten (10) days before planned entry.
II.Q.6	Seller's Qualified Entry Supervisor's (QES) interview with Buyer's Safety Office	Seller's request shall include the name of the QES and a certification statement that the individual has been trained in accordance with 29 CFR 1910.146(g).	Ten (10) days before planned entry.
II.R.1 -R.3	Use of Respirator	Respirator permit (EXHIBIT 21) <ul style="list-style-type: none"> - Training records - Fit testing records - Physicians Evaluation - Copy of respiratory protection program 	Ten (10) days before start of work.
II.R.4	Use of breathing air or breathing air systems.	Certification that air or air system meets the requirements of ANSI/CGA Spec. G-7.1-1989, or current standard.	Prior to use of breathing air or breathing air system.
II.R.5	Use of a dust mask.	Respirator permit (EXHIBIT 21) <ul style="list-style-type: none"> - Training records 	Ten (10) days before use.
II.S	Work involving asbestos containing materials.	Provide asbestos work submittals required by EXHIBIT 10.	Ten (10) days before start of work.
II.T	Dust-generating activities on silica-bearing materials (such as grinding concrete) that requires use of engineering controls, respiratory protective equipment or workplace exposure measurements.	Silica Procedure (EXHIBIT 9)	Ten (10) days before start of work.
II.U	Use of Lasers – Class 3B or Class 4	Written procedure (EXHIBIT 27) for Buyer approval (procedure to demonstrate compliance with ANSI Z-136.1).	Ten (10) days before start of work evolution.
II.W	Use of fuel-powered engines indoors, or in outdoor areas with limited ventilation.	Notification and approval from the Buyer, or Seller's written assessment as to why the use of fuel-powered equipment does not pose an exposure risk, for Buyer's concurrence.	Ten (10) days before start of work.
II.Y	Generation of waste as part of scope of work.	Seller Waste Process Evaluation List (EXHIBIT 11) which lists, for each waste stream: <ul style="list-style-type: none"> - the process generating the waste, - the substances used in the process, - the hazardous constituents, - type of waste generated, - special storage requirements, - Appropriate disposal path, and - Quantity expected to be generated. 	Ten (10) days prior to start of work.

PART VI: EXHIBITS REQUIRED BY S-12

SECTION	CIRCUMSTANCE	REQUIRED DOCUMENTATION	WHEN REQUIRED
II.Z.6	Hydrostatic or pneumatic testing.	Seller and Buyer signed pre-testing check sheet in accordance with the contract technical specification.	Ten (10) days prior to commencement of hydrostatic or pneumatic testing.
DURING WORK			
III.A.3	Any occupational injury, illness or accident.	Verbal and written notification to the Contract Administrator and the Buyer's Representative.	Immediately but no later than one (1) hour of occurrence.
III.A.4.1	Contract term exceeds eight (8) hours, or any contract involving injury/accident.	OSHA Form 300 (EXHIBIT 1)	Within three (3) workdays of the end of the month
III.A.4.2	Reportable Occupational injury/illness, or Property Damage or Motor Vehicle Accident	DOE 5484.3 (EXHIBIT 2)	Within three (3) workdays of the injury/illness or end of the month; or concurrent with OSHA Form 300 submittal for property damage or motor vehicle accident.
III.C.5	Use of Seller vehicles and equipment on site.	Documented inspection of Seller vehicles and equipment for Buyer review, upon request.	Upon Buyer's request.
III.F.9	Perform lockout/tagout (LOTO)	A written energy control procedure, in accordance with 29 CFR 1910.147(a)(4), for work on Seller owned systems/ equipment or Buyer owned systems/ equipment that have been completely turned over to the Seller; or completion of EXHIBIT 30 for work on Buyer owned systems/equipment which have not been turned over to the Seller.	Two (2) days in advance of anticipated need.
III.F.11	Work on Kesselring Site plant-controlled systems requiring energy isolation.	Notification of Buyer's Representative and completion of Buyer generated EXHIBIT 19.	Ten (10) days before start of work.
III.G.2.1	Use of any open flame, heat or spark producing device.	Notify Buyer's Representative and obtain a Hot Work Permit (EXHIBIT 20).	Prior to use.
III.H.1	Storage of compressed gas cylinders inside of buildings overnight.	Notify Buyer's Representative and obtain Buyer's approval.	Prior to storage inside buildings overnight.
III.J.1	Elevated work performed six (6) feet or more above ground, water or next lower surface, whenever fall protection system is used.	Elevated Work Procedure (EXHIBIT 15).	Twenty (20) days before start of work.
III.J.11	Scaffold erection and disassembly	Elevated Work Procedure (EXHIBIT 15).	Twenty (20) days before start of work.
III.L.2	Changed Condition/Emergent Work	Work not previously reviewed and released shall be formally document by the Seller for Buyer approval.	Prior to work activity taking place.
III.M	Temporary systems change, condition or modification of existing systems.	Notify Buyer's Representative for review and approval.	Prior to causing change, condition or modification of existing systems.

END OF PART V

PART VI: EXHIBITS REQUIRED BY S-12

EXHIBITS LISTING

Exhibit 1	OSHA Form 300 & Instruction
Exhibit 2	US DOE Form 5484.3
Exhibit 3	Safety Incident and Environmental Investigation and Formal Reporting Criteria
Exhibit 4	Poster of Worker Protection for DOE Contractor Employees Management System Reporting Form
Exhibit 5	Materials to be used on Site; Usage, Handling & Disposal Approval
Exhibit 5I	Materials to be used on Site; Instructions
Exhibit 6	Evaluation of High Risk Work and the need for a Hazard Analysis
Exhibit 6A.....	High Risk Work Authorization Form
Exhibit 6B.....	High Risk Work Acknowledgement and Briefing Sheet
Exhibit 7	Clearances from Overhead Power Lines for Cranes, Backhoes, Un-Insulated Aerial Lifts Used by Qualified or Unqualified Operators, Scaffolds, & Similar Equipment
Exhibit 8	Distances for Excavations on or Near Utilities
Exhibit 9	Silica Procedure
Exhibit 10	Asbestos Control Requirements
Exhibit 11	Seller Waste Process Evaluation List
Exhibit 12	Refueling Procedure
Exhibit 13	Identification of Current Subcontractor Employees with Beryllium-Exposure History
Exhibit 14	Energized Electrical Work Plan
Exhibit 15	Elevated Work Procedure
Exhibit 16	Excavation Plan
Exhibit 17	Major Equipment Declaration
Exhibit 18	Hazard Analysis Plan
Exhibit 19	Kesselring Site Prototype Plant and OSHA Tag-out Systems Equivalency
Exhibit 20	Hot Work Permit
Exhibit 21	Respirator Permit
Exhibit 22A.....	Permit Required Confined Space Entry Permit
Exhibit 22B.....	Non Permit Confined Space Entry Form
Exhibit 22C.....	Confined Space Evaluation
Exhibit 23	Site Excavation Permit
Exhibit 24	BMPC Penetration Permit
Exhibit 25	Asbestos Work Permit
Exhibit 26	BMPC Beryllium Work Permit
Exhibit 27	Procedure Template
Exhibit 28	Disposal/Recycling Facility Acceptance Form
Exhibit 29	Supplemental Work Scope for Use OF Weight Handling Equipment
Exhibit 30	Lockout Tagout Procedure
Exhibit 31A.....	Temporary Systems Initiation Check-Off Sheet
Exhibit 31B.....	Temporary System Operating Procedures
Exhibit 31C.....	Temporary System Diagram
Exhibit 32.....	Soil Disturbance Evaluation and Erosion and Sediment Control Plan Development Form
Exhibit 33	Work Release/Work Authorization Form

S-12 Revision 27 EXHIBITS

General Information

1. Organization Name: _____
- Project: _____
7. Date of Occurrence:
YYYYMMDD
8. Time of Event (Military)
9. Accident Occurred: Indoors Outdoors
Other: _____
5. Investigation Type: A B C Non-recordable
4. Accident Type: Injury/Illness Vehicle
 Property Damage
10. On KAPL Premise: Yes No
11. Specific Location: _____

Employee Information

12. Check One: Injury/Illness Employee
 Operator of Equipment/Vehicle
13. Name: _____
- Home Address: _____
14. Badge Number or Last 4 SSN: _____
15. Date of Birth:
YYYYMMDD
16. Sex: Female Male
17. Occupation: _____
18. Time Employee Began Work (Military)
19. Date of Hire:
YYYYMMDD
20. Experience on this Job/Equipment Under 3 Months
 3 to 12 Months
 Over 12 Months

(If Property Damage or Vehicle Accident, Go to Line 26)

Injury/Illness (OSHA Information)

21. Injury Code (10)
 Illness Codes
 Code 7a(21) - Skin disease or disorders
 Code 7b(22) - Dust diseases of lungs
 Code 7c(23) - Resp. due to toxic agents
 Code 7d(24) - Poisoning
 Code 7e(25) - Disorders-Physical agents
 Code 7f(26) - Disorders-Repeated trauma
 Code 7g(29) - All others
22. Workdays Lost:
(Actual if available or estimated expected)
23. Workdays Restricted:
(Actual if available or estimated expected)
24. Has employee returned to work with no further anticipated workdays lost or restricted?
 Yes No
25. Permanent transfer to different job because of accident?
 Yes No
- Terminated because of accident?
 Yes No
26. Did employee die?
 Yes No
- If "Yes," enter date
YYYYMMDD

18 U.S.C. SECTION 1001; ACT OF JUNE 25, 1948, 62 STAT.74; MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR PRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTERS WITHIN ITS JURISDICTION.

Equipment/Hardware Involved (as applicable)

34. #1 Equipment _____
(Generic (or brand) name and model)

#2 Equipment _____
(Generic (or brand) name and model)

35. Did equipment design or defect contribute to accident cause or severity? ___ Yes ___ No

PPE being worn at time of injury/illness: _____

NARRATIVE GUIDE

DO NOT INCLUDE THE NAME (OR OTHER PERSONAL IDENTIFIER) OF THE EMPLOYEE/OPERATOR OR WITNESS IN THIS SECTION

Use third person references, e.g., he slipped on the wet floor and broke his right toe.

36. Activity in progress at time of accident. Be specific. For example, if the employee was using, equipment or handling materials or chemicals, name them and tell what he was doing with them.

37. Events Describe the accident sequentially, beginning with initiating events. Tell what happened, how it happened and end with nature and extent of injury/damage. Use a separate sheet for additional space.

Name any objects or substances (e.g., utility knife, glass beaker containing saline solution) involved and tell how they were involved.

Describe the nature of the injury/illness/damage. Name the body part affected in injury or illness. (e.g., amputation of right index finger at second joint)

Name and address of primary health care provider (e.g., physician, nurse, etc.) _____

If hospitalized overnight, name and address of hospital _____

38. Accident Causes.

a. Conditions

b. Actions

c. Factors influencing a or b.

39. Corrective Actions

a. Actions taken

b. Actions recommended

c. To be completed by _____
Implementation Date

40. Report Prepared by _____ Date _____ Telephone _____

Official Position: Supervisor ____ Safety Professional ____ Other

41. Supervisor responsible for Corrective Action _____ Date _____ Telephone _____

42. Accident Investigation Contact
(If different from line 40) _____ D. Delwiche _____ Date _____ Telephone _____ 518-395-6366 _____

EXHIBIT 3

Safety Incident Investigation and Formal Reporting Criteria

- A. Accident or occupational injury resulting in a fatality
- B. Accident or occupational injury requiring in-patient hospitalization
- C. An acute occupational injury/illness resulting in 3 or more lost work days when caused by a hazard or behavior that should reasonably have been mitigated.
- D. An electrical shock during work that requires energized electrical work controls (i.e., greater than 50 volts) or caused by defective equipment
- E. Unauthorized entry into an energized electrical enclosure where the restricted approach boundary or arc flash boundary was crossed
- F. Work performed on an energized electrical system/component without applying required energized electrical work hazard controls
- G. Unexpected hazardous energy is discovered after verification checks indicate the absence of hazardous energy and the hazardous energy places the worker at risk
- H. Work performed on a system/equipment without the use of Lockout/Tagout (LOTO) when LOTO would be required to preclude exposure to hazardous energy
- I. Removal of LOTO hazardous energy controls prior to restoring the affected system/equipment to a safe condition that exposes an employee to hazardous energy
- J. Work performed without the use of an active means of fall protection when such protection is required and the fall hazard is not identified and mitigated by required technical direction. An incident report is also required when a worker does not use an active means of fall protection and is exposed to an ejection hazard in an articulating or extensible boom aerial lift.
- K. Any fall from a height greater than 6 feet above the next lower level
- L. Work performed while using an improperly engineered or otherwise deficient Personal Fall Arrest, Restraint, Positioning, or Safety Net system that would not protect the worker as intended
- M. Unauthorized entry into a Permit-Required Confined Space (PRCS)
- N. Entry into an excavation with an inadequate protective system or unplanned discovery of or damage to a system potentially containing hazardous energy within an excavation.
- O. A slip, trip, or fall caused by an inadequately maintained surface resulting in a recordable injury
- P. Any mechanical lifting operation resulting in a loss of control of the load (e.g., dropping or significantly lowering, swinging, or tilting of the load) that could cause, or has resulted in, personal injury
- Q. Occupational exposure to a physical, chemical, or biological hazard that exceeds applicable Industrial Hygiene (IH) exposure limits.
- R. Any other event, condition, or employee behavior judged to be of comparable severity to those specified above.

Environmental Incident Investigation and Formal Reporting Criteria

1. An event that results in off-site protective actions or environmental remediation.
2. An event causing detrimental impact to ecological resource for which the Site is responsible.
3. A significant on-site or off-site release of a hazardous substance such as those contained in 40 CFR 302 or 40 CFR 355.
4. Improper off-site disposal of a regulated waste.
5. A release of a regulated pollutant, hazardous substance, material, or waste that must be reported to outside agencies in a format other than routine reports.
6. Operations that occur without the required regulatory permit(s).
7. A release of oil or petroleum greater than 5 gallons.



U.S. Department of Energy

Worker Protection for DOE Contractor Employees

Policy:

U.S. Department of Energy (DOE) contractor employees shall be provided with safe and healthful working conditions in accordance with the standards prescribed pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, and the Department of Energy Organization Act of 1977; said standards shall be consistent with those promulgated under the Occupational Safety and Health Act of 1970, Public Law 91-596. Please refer to DOE O 440.1A for details.

DOE Contractors:

DOE has determined that

Bechtel Marine Propulsion Corporation

is subject to DOE Acquisition Regulation (DEAR) Subpart 970.23 and is, therefore, required to comply with applicable DOE-prescribed Occupational Safety and Health Administration (OSHA) standards listed therein. This Order and the standards are available for employee review at the local **Site Safety Office**.

As delineated in DOE O 440.1A, Attachment 2, Contractor Requirements Document, the DOE contractor is required to:

1. Implement a written worker protection program that provides a place of employment free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees.
2. Establish written policy, goals, and objectives for the worker protection program.
3. Use qualified worker protection staff to direct and manage the worker protection program.
4. Assign worker protection responsibilities, evaluate personnel performance, and hold personnel accountable for worker protection performance.
5. Encourage employee involvement in the development of program goals, objectives, and performance measures and in the identification and control of hazards in the workplace.
6. Inform workers of their rights and responsibilities by appropriate means, including posting this poster in the workplace where it is accessible to all workers.
7. Identify existing and potential workplace hazards and evaluate the risk of associated worker injury or illness.
8. Implement a hazard prevention/abatement process to ensure that all identified hazards are managed through final abatement or control. For existing hazards identified in the workplace, abatement actions prioritized according to risk to the worker shall be promptly implemented, interim protective measures shall be implemented pending final abatement, and workers shall be protected immediately from imminent danger conditions.
9. Provide workers, supervisors, managers, visitors, and worker protection professionals with worker protection training.

10. Ensure that subcontractors performing work on DOE-owned or -leased facilities comply with these requirements and the contractor's own site worker protection standards (where applicable).

Contractors are also required to comply with the Federal regulations and national standards listed in section 12 of Attachment 2 to DOE O 440.1A. In addition, DOE O 440.1A contains requirements for the following specific functional areas, if the contractor is involved in these activities: construction safety, fire protection, firearms safety, explosives safety, industrial hygiene, occupational medical, pressure safety, motor vehicle safety, and suspect and counterfeit item controls. Please refer to DOE O 440.1A for details.

Employees:

DOE contractor employees have the right to:

1. accompany DOE worker protection personnel during workplace inspections;
2. participate in the activities provided for in DOE O 440.1A, Attachment 2, on official time;
3. express concerns related to worker protection;
4. decline to perform an assigned task because of a reasonable belief that, under the circumstances, the task poses an imminent risk of death or serious bodily harm to that individual, coupled with a reasonable belief that there is insufficient time to seek effective redress through the normal hazard reporting and abatement procedures established in accordance with the requirements herein;
5. have access to DOE worker protection publications, DOE-prescribed standards, and the organization's own worker protection standards or procedures applicable to the workplace;
6. observe monitoring or measuring of hazardous agents and have access to the results of exposure monitoring;
7. be notified when monitoring results indicate they were overexposed to hazardous materials; and
8. receive results of inspections and accident investigations upon request.

Inspections:

All activities under this contract are subject to inspection by DOE. When an inspection under DOE O 440.1A is conducted, a contractor management representative and a representative authorized by the employees will be given an opportunity to accompany the DOE inspector. Where there is no representative authorized by the employees, the DOE inspector will consult with a reasonable number of employees concerning safety and health conditions in the workplace.

Concerns:

Employees or former employees may file a concern with the contractor management or with the local DOE office,

as described in DOE 5480.29. Concerns may be submitted either verbally by calling the local DOE office employee concerns hotline, telephone (**See Below**) or in writing. An example report form is available adjacent to each hotline poster, or one may be obtained from the Employee Concerns Manager at the local DOE office.

Imminent Danger:

DOE contractors are required to implement procedures to allow workers, through their supervisors, to stop work when they discover employee exposures to imminent danger conditions or other serious hazards. The procedure shall ensure that any stop work authority is exercised in a justifiable and responsible manner.

Nondiscrimination:

No contractor shall discharge or in any manner discriminate against any employee by virtue of the filing of a complaint, or in any other fashion exercising on behalf of himself or herself or others any action set forth in DOE O 440.1A or DOE 5480.29.

It is the policy of DOE that employees of contractors at DOE facilities should be able to provide information to DOE, to Congress, or to their contractors concerning violations of law, danger to health and safety, or matters involving mismanagement, gross waste of funds, or abuse of authority, to participate in proceedings conducted before Congress or pursuant to this part, and to refuse to engage in illegal or dangerous activities without fear of employer reprisal. Contractor employees who believe they have been subject to such reprisal may submit their complaints to DOE for review and appropriate administrative remedy as provided in 10 CFR Part 708.

Inquiries:

Inquiries should be addressed to the contractor; however, additional inquiries may be addressed to the local DOE office:

Naval Reactors Laboratory Field Office
- Schenectady -
(518) 395-6366

Naval Reactors Representative Office
- West Milton -
(518) 884-1234

Posting Requirements:

Copies of this notice must be posted in a sufficient number of places in Government-owned plants and facilities operated by DOE contractors subject to DOE Acquisition Regulation (DEAR), Subpart 970.23 and DOE O 440.1A, to permit employees working in or frequenting any portion of the plant to observe a copy on the way to or from their workplace.

EXHIBIT 5

On-Site Materials - Usage, Handling and Disposal Approval Attach MSDS Form

Project Title: _____

Reference ID (KC, MR #): _____

Subcontractor: _____

Date Submitted: _____

PRODUCT SPECIFICS	
Product Name: _____	
Is the MSDS provided <5 years old: Yes _____ No _____ If No, explain why: _____	
Has the Restricted Use Materials List been reviewed (per S-12 - Part II P) and are Restricted Use Materials Present? Yes _____ No _____	
If Yes, list specific material(s) present _____	

PRODUCT USAGE			
(Manufacturer's Original labels must be on all original product containers) (Only the amount of material required to perform specified work will be brought on site)			
Specific Job Location: <input type="radio"/> Indoors <input type="radio"/> Outdoors (Check all that apply)			
Describe where will the material be used: _____			
Duration of Site Use:		Container Size/Type:	Maximum Amount to be Used:
Method of application: (roller, brush etc.)		Rate of application: (i.e., gal. per hour)	
Intended Use: _____			
Will other containers be used for mixing/splitting or storage of this product? No _____ Yes _____			
If Yes, describe how these containers will be labeled? _____			
On-Site Storage Provisions: _____			

WASTE			
If additional material must be brought on Site, state what steps will be taken to minimize storage time of the material and the waste resulting from use of the material: _____			
Is waste expected to be generated (including brushes, rollers, rags etc.) as a result of using the material? Yes _____ No _____ If Yes,			
Indicate Waste Type:		Amount anticipated:	Waste Disposal Path:
Is any additional waste expected to be generated (rinse/wash water, cleaning agents, etc.) as a result of the application of the product? Yes _____ No _____ If Yes,			
Indicate Waste Type:		Amount anticipated:	Waste Disposal Path:

"I hereby certify that employees who will handle, use or store the above listed material have been trained relative to the use, handling, required personal protective equipment and waste/disposal provisions as indicated on the MSDS in accordance with Hazard Communication provisions and S-12 Requirements, and I have reviewed and considered non-hazardous alternatives to all materials which could potentially generate hazardous waste, or I am personally aware that such a review has been done by others under my direction.

_____ Contractor Representative

_____ Date

=====

FOR BMPC USE ONLY

Approving Organization	Signature/Date	Does future use of material require approval?		If YES, describe specific technical reason it will require re-approval.
		Yes	No	
Safety				
IH				
Environmental				
Waste				

Written Work Procedure Required? Yes _____ No _____

Provide to: (Organization) _____

EXHIBIT 51 INSTRUCTIONS

On-Site Materials - Usage, Handling and Disposal Approval
Attach MSDS Form

Project Title: _____

Reference ID (KC, MR #): _____

Subcontractor: _____

Date Submitted: _____

PRODUCT SPECIFICS	
Product Name: _____	There are occasions where the most recent MSDS is not appropriate and the MSDS should match the material being used.
Is the MSDS provided <5 years old: Yes _____ No _____ If No, explain why: _____	
Has the Restricted Use Materials been reviewed (per S-12 - Part II P) and are Restricted Use Materials Present? Yes _____ No _____	
If Yes, list specific material(s) present: _____ <small>In some cases the use of materials that are on the list is acceptable, for example: specialty applications (e.g. MEK in paint thinner).</small>	

PRODUCT USAGE			
(Manufacturer's Original labels must be on all original product containers) (Only the amount of material required to perform specified work will be brought on site)			
Specific Job Location: <input type="radio"/> Indoors <input type="radio"/> Outdoors (Check all that apply)			
Describe where will the material be used: _____ <small>Looking for a specific area such as "A9 first floor in a closet", "in the roadway", could make a difference in how the material needs to be controlled.</small>			
Duration of Site Use:	Container Size:	Maximum Amount to be Used:	
Method of application: (roller, brush etc.)		Rate of application: (i.e., gal. per hour)	
Intended Use: _____			
Will other containers be used for mixing/splitting or storage of this product? No _____ Yes _____			
If Yes, describe how these containers will be labeled? _____ <small>Flammable materials must be stored in a Flammable Locker.</small>			
On-Site Storage Provisions: _____ <small>If different from the manufactures containers, it is important to ensure that the containers are properly marked for the material being stored in them and that they are chemically compatible.</small>			

WASTE			
If additional material must be brought on Site, state what steps will be taken to minimize storage time of the material and the waste resulting from use of the material: _____ <small>There are situations when it would be acceptable for excess material to be brought on-site. Want to make sure there are proper plans for removal from the site.</small>			
Is waste expected to be generated (including brushes, rollers, rags etc.) as a result of using the material? Yes _____ No _____ If Yes, _____			
Indicate Waste Type: _____ <small>Such as: bulbs, batteries, spent oils, solvents, rollers, cleaners, brushes, rags, containers, vacuums, etc.</small>	Amount anticipated: _____	Waste Disposal Path: _____	
Is any additional waste expected to be generated (rinse/wash water, cleaning agents, etc.) as a result of the application of the product? Yes _____ No _____ If Yes, _____			
Indicate Waste Type: _____	Amount anticipated: _____	Waste Disposal Path: _____	

"I hereby certify that employees who handle, use or store the above listed material have been trained relative to the use, handling, required personal protective equipment and S-12 Requirements and S-12 Requirements for hazardous materials which could potentially generate hazardous waste under my direction.

- Examples are:
- Solvent soaked rags would be controlled as Hazardous waste for F listed solvents or D listed characteristics;
 - All Hazardous waste must be stored in a waste accumulation area (WAA) near or at the Point of Generation.
 - Bulbs or batteries would be handled as Universal waste;
 - Oil stored and labeled as Used oil,
 - Cleaning solvents could be controlled as Hazardous waste and stored in Flame locker in WAA,
 - Non hazardous rags, brushes or containers in the trash or C&D, etc.

Date _____

FOR BMPC USE ONLY

Approving Organization	Signature/Date	Does future use of material require approval?		If YES, describe reason it will require re-approval.
		Yes	No	
Safety				
IH				
Environmental				
Waste				

Written Work Procedure Required? Yes _____ No _____

Provide to: (Organization) _____

EXHIBIT 6

EVALUATION OF HIGH RISK WORK AND THE NEED FOR A HAZARD ANALYSIS

High Risk Work (HRW) is defined as that work which if performed improperly, could cause serious personal injury or a fatality. Other characteristics inherent in the work task or location, such as the unstable nature of the work or materials and proximity to other hazardous operations, may justify this classification. It is the Buyer's policy that performance of HRW be controlled to mitigate the risk as much as practical. To that end, the Seller shall scrub the work process to, where feasible, eliminate or reduce the hazard risk, or apply engineered and/or administrative controls to minimize the risk, and / or to use Personnel Protective Equipment (PPE) to minimize the risk. HRW requires special work reviews (i.e., task specific hazard analysis; also see Section III.M) to be performed and control mechanisms to be in place prior to performing the work. For operations involving HRW or unusual hazards, and in addition to the control plans listed in this EXHIBIT, a Seller-prepared written Hazard Analysis Plan/Procedure shall be submitted to the Buyer for approval at least ten (10) work days before the start of the affected work. The following is a list of work evolutions that have been determined to be HRW and, as such, require a hazard analysis. This list is established for guidance only and is not considered to be all-inclusive. One or more of the control mechanisms listed below, shall be used to control this work.

1. Energized Electrical Work

Work-on, or work-near, hazardous conductors is defined as breaking the plane of a panel that contains exposed energized conductors equal to or greater than 50 volts, or working within the restricted approach boundary as defined by NFPA 70E Article 130 – whichever is more restrictive. Verifying circuits de-energized is considered energized electrical work but does not require a written Energized Electrical Work Plan. Checking / verifying circuits de-energized requires the Seller personnel to invoke NFPA 70E Article 130 requirements for shock and arc flash hazards.

Control Mechanisms:

- Justification as to why the work must be performed energized.
- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel performing the work must be qualified persons (Electrical).
- An Energized Electrical Work Plan.

2. Elevated Work

Work on an elevated surface 6 feet or more above the next lower surface when a fall hazard exists. Work using the following elevated work controls is not HRW:

- Work on roofs or other elevated work surfaces that are protected by standard guardrails, parapets, or similar physical barriers or other equivalent administrative or physical controls.
- Work off of ladders, unless the ladder raises the worker above a standard guardrail system or the worker must extend laterally to the point where the middle of the body extends beyond the ladder rails.
- Work off of aerial lifts, (e.g., articulating boom lift) as long as the individual maintains both feet on the platform and the worker wears a personal fall arrest system in accordance with the manufacturer's instructions for the aerial lift.
- Work from a mobile scaffold provided the worker maintains both feet on the platform floor.
- Work on standard scaffolding, provided the scaffolding is erected in accordance with the manufacturer's instructions and meets standard guardrail requirements including the worker maintaining both feet on the platform floor.
- Work more than 6 feet away from any unprotected edges performed in accordance with an approved Elevated Work Plan.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel performing the work must be trained and certified.
- A fall protection plan or Elevated Work Plan.

3. Excavation

Work that includes digging with power equipment within 3 feet of underground utilities containing potential hazardous energy, or when a person must enter an excavation 5 feet or more in depth.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- An approved Excavation Permit
- An Excavation Plan prepared and signed by a registered professional engineer or a competent person as defined in the OSHA standard.
- Personnel performing the work must be trained.
- Daily inspection of the excavation by a competent person.

4. Confined Space Entry

Entry into a Permit-Required Confined Space.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel must be trained and qualified.
- Confined Space Entry Permit.

5. Diving Operations

All diving operations except when performed for search, rescue, or related public safety purposes or when performed by Navy divers.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel must be qualified.
- Safe Practices Procedure.
- Pre-dive, during dive and post-dive procedures.
- Respirator Permit.

6. Blasting

Use of explosives for; demolition or excavation work.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel must be authorized and qualified to handle and use explosives.
- Permission must be obtained from the Manager, Security, the Manager, Safety, and the local Naval Reactors field office before any explosives are brought on site.

7. Building Demolition and Renovation

Building demolition or renovations or building remodeling that would include the removal of walls, ceilings or floors that include a load bearing member.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- An engineering survey of the structure must be completed by a competent person, to determine the condition of the framing, floors, and walls, and possibly of unplanned collapse of any portion of the structure.
- A demolition plan (e.g., shoring and bracing, disconnection of services, relocation of temporary services, characterization and disposal of hazardous materials, and the elimination of various other hazards, such as, fragmented glass, falling objects, fall hazards, etc.).

8. Welding/Burning Operations

Welding, burning, cutting, grinding, brazing, or similar work that produces flames or sparks whenever it includes one or more of the following conditions:

- Workers wearing PPE, such as anti-contamination clothing, coveralls (e.g., Tyvek™) or similar protective gear or materials which have an increased risk of ignition, or
- The worker's escape route is hampered such that timely escape in the event of fire is not possible.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel must be trained in the use of fire extinguishers.
- A Fire Watch equipped with an appropriate fire extinguisher(s), the purpose of which is safety of the welder in addition to the facility.
- Hot Work Permit

9. Use of Lasers

Use of Class 3b or 4 lasers where operations are not governed by documented standard operating procedures or in situations where there is increased potential for skin or eye exposure to the laser energy, e.g., open beam alignments; laser system modifications that temporarily remove or disable interlocks or other safeguards; and laser system maintenance, testing, or troubleshooting where the beam is exposed.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Personnel must be trained.
- Written safety plan approved by the Laser Safety Officer. Work must be performed in accordance with ANSI Z136.1 "Safe Use of Lasers" (current edition).

10. Lifting and Handling Operations

A lift is "complex" if it involves one or more of the following:

- Highly hazardous materials, i.e., materials that are extremely toxic, flammable, etc., such that uncontrolled release would have serious safety and health, environmental, or property damage consequences. Materials in this category include explosives, highly volatile substances, unstable chemicals and poisons. This does not include routine industrial materials such as oxygen, acetylene, propane, or gasoline in bottles, cans, or tanks that are properly secured in racks or stands designed for lifting and handling or properly packaged for shipment.
- Large and complex geometric shapes,
- Lifts of personnel,
- Lifts exceeding 75 percent of the crane's certified load chart capacity. (e.g., main hoist, whip hoist) planned for use, except during load testing,
- Multiple cranes lifts (applies to cranes of all type), excluding lifts using multiple non powered lifting devices (e.g., chain hoists), and;
- Multiple hook lifts on the same crane (applies to cranes of any type), excluding bridge or gantry cranes with hooks coupled together and specifically designed for simultaneous lifting.
- Other lifts involving non-routine operations, difficult operations, sensitive equipment, or unusual safety risks. Examples include lifts occurring in the vicinity of overhead transmission lines, over occupied buildings where a drop of the load endangers the safety of the occupants, or in areas where significant damage may occur.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Pre-work briefing.
- Written procedure and/or rigging sketch, as appropriate.
- Riggers and crane operators must be trained and certified.
- Periodic inspections of crane/rigging equipment, as required.

11. Work on Stored High-Energy Systems

Work on systems where the unexpected energization, start up, or release of stored energy could cause injury and either:

- The system cannot be completely de-energized (“Zero Energy State”) due to stored or potential energy that cannot be dissipated and/or neutralized,
- The system cannot be locked and tagged out using standard lock-out/tag-out procedures.
- Pneumatic testing.

Control Mechanisms:

- An evaluation of the job hazards and identification of PPE, as appropriate.
- Written energy control safety plan.
- A review of the system schematics to ensure all energy sources have been identified (including any capacitors requiring discharge) and/or a walk down of the system to verify proper valve line-ups.
- De-energize or otherwise render the system inoperative and lock and tag-out the system.
- Relieve, disconnect, restrain and otherwise render safe all potentially hazardous stored or residual energy.
- Verify that isolation or de-energization of the system has been accomplished.
- If the system cannot be locked out using normal locking means, then additional energy control measures must be provided, along with a tag-out, such that the level of safety achieved is equivalent to that of a lockout.

12. Use of Temporary Building Support System(s) or Critical Building Erection Events

New or renovation work which requires temporary structural support systems as bracing of structures during construction (e.g., tilt-up construction) or renovation activities.

Control Mechanisms:

- Provide erection/installation sequence.
- Detail how support systems will be installed, including engineering specifications.
- Ensure that a complete engineering analysis has been conducted and reviewed in detail for critical systems.
- Document this analysis for review by Buyer.
- Identify special equipment or hardware.
- Outline what safety barriers and area posting must be established.
- Evacuation plans and routes shall be established when required and be concurred with by Buyer.

13. Potentially Immediately Dangerous to Life or Health Atmospheres (IDLH)

Entries into areas that are potentially IDLH including work that may activate chemical deluge systems;

- Although a high-risk activity, entries into such environments during fire fighting activities are exempted from the provisions contained herein.
- Achieving formal mechanical isolation – physical disconnect to disable chemical deluge exempts this from high-risk work controls.

Control Mechanisms:

- Control plan for adjacent spaces.
- Personnel monitoring in conjunction with engineered ventilation
- Supplied breathing air, including back-up air supply, and emergency escape plan

EXHIBIT 6A HIGH RISK WORK AUTHORIZATION FORM (Continued)

III. HRW FWP Review and Concurrence: I understand the scope and risks associated with the work in this FWP and the need to perform it as HRW. I concur that the FWP has been prepared in accordance with the elements of EXHIBIT 6A (High Risk Work Authorization Instructions) of S-12 and provides an effective hazard mitigation strategy to safely perform the work.		
Seller Work Document Preparer	(print/sign)	Date
Buyer Safety Organization	(print/sign)	Date
Seller Work Supervisor	(print/sign)	Date
Buyer's Manager, Performing Component	(print/sign)	Date
IV. Work Authorization: I have reviewed the need to perform this work as HRW and conclude that it is warranted, the FWP has been engineered to provide the necessary hazard mitigation measures to protect workers, the workers are adequately trained and have been or will be briefed before performance of the HRW, and arrangements have been made to provide the appropriate level of field surveillance during the HRW.		
Seller CSC Recommendation to authorize the work:		
Seller CSC	(print/sign)	Date
I authorize the performance of this HRW.		
Buyer's Manager* Authorizing HRW	(print/sign)	Date
* As designated by the Buyer's ESH Director		
This completed form shall be included with the issued FWP prior to the start of HRW.		

EXHIBIT 6A HIGH RISK WORK AUTHORIZATION INSTRUCTIONS

Objective:

Exhibit 6A must be completed prior to performing any High Risk Work (HRW). HRW is defined as work that could cause serious personal injury or a fatality if performed improperly. Included are attributes that should be used by the Seller and Buyer in their review and approval of HRW. The depth of the review must be sufficient to ensure the work can be completed in a safe manner and is not limited to the attributes below. This instruction does not supersede any local work or test processes but will be in addition to those processes.

I. Seller Work Description: The work description should include the specific High Risk Hazard as defined in Specification S-12. Describe if the work is not specifically listed but falls into the high risk category listed as “other” (i.e. work involving a complex penetration or use of unique hazardous chemicals).

II. Seller HRW Elements and Controls: Every effort should be made to engineer the hazard out of work tasks so that HRW controls are not required. In some evolutions / areas this is not practical. Additional work elements and controls must be incorporated to reduce the hazards of this work. The proposed work has been reviewed and determined to contain HRW Elements as defined by governing safety regulations and/or subcontractor work specifications. The specific HRW Hazard should be listed in the HRW Elements and Controls table along with the corresponding Work Control Mechanisms. The Work Control Mechanisms should include the Engineering, Administrative, and Oversight Controls required. The HRW control approach to mitigate the hazards is approved by the Buyer Manager, Facilities Construction Engineering.

III. HRW FWP Review and Concurrence: Formal Work Procedure Review is the process by which planned work is reviewed to ensure all of the correct work elements have been established for the task. The Formal Work Procedure Review process does not authorize the work to begin but only signifies that the formal work procedure is adequate for the intended task.

Formal Work Procedure Review (Seller Formal Work Procedure Preparer) (Attributes to be considered as appropriate)

- Understand the potential issues and risks associated with the task and ensure proper hazard mitigation is engineered into the formal work procedure. (i.e. Can the hazard be eliminated and/or is the hazard mitigation plan adequate)
- Understand the scope of the work task. This may include physically viewing the work location.
- A formal work procedure has been prepared and approved in accordance with EXHIBIT 27 (Procedure Template). While not limited to, this review shall include the following elements for validation:
 - Work scope defined.
 - Hazard Assessment and Mitigation Strategy.
 - Minimum Training/Certification Requirements has adequate detail based on the capability of the workforce.
 - Rescue or Medical Notification Provisions.
 - Stop Work Conditions.
 - Certification of Review process.
 - Engineering Calculations included.
 - HRW Permit/Plan is included.

EXHIBIT 6A HIGH RISK WORK AUTHORIZATION INSTRUCTIONS (Continued)

- Determine need for a formal Buyer/Seller readiness review. The readiness review must be completed prior to signing for Formal Work Procedure Review if required. For example, this review may be required for the following types of work:
 - Jobs that are unique or involve a new or unproven process.
 - Technically challenging evolutions never before or infrequently performed.
 - Significant jobs that require special and/or unique worker qualifications.
- For repetitive work using the same formal work procedure, a one time review may be sufficient as long as the work scope and associated hazards have not changed.

IV. Work Authorization: Work Authorization is the validation that all prerequisites are met and gives approval to commence work. The pre-job brief is used to verify that the workers and support personnel understand the scope of work, the hazards involved and the methods to mitigate, initial conditions, qualification/training required, work retests, roles and responsibilities, casualty actions, and communications. The extent of the pre-job brief should be commensurate with the complexity and hazards involved in the work as well as the experience level of the workers.

Work Authorization (Seller Recommended Buyer Approved) (Consider attributes as appropriate)

Provide review that the appropriate processes and rigor have been applied in preparing for the HRW evolution and authorize the performance of the HRW. This should include validation of key attributes considered by the authorizing signatories such as:

- Pre-job brief has been performed. This brief shall include the proper detail based on the complexity and hazards associated with the work and the expected actions for responding to potential anomalies are understood. The workers and support personnel should be questioned to satisfy the authorizing manager that the work will be performed in accordance with the formal work procedure and trained practices. Discussion of potential problems, lessons learned and other jobs occurring in the area should also occur.
- Workers understand the need to perform the HRW, the safety requirements and the mitigation measures to do the job, and have reviewed the formal work procedure. Documented on Exhibit 6b.
- A minimum of two persons shall be present for HRW evolutions and they have the ability to make notification should emergency response be needed or Buyer approval has been obtained for performance by a single individual based on a documented hazard analysis and a hazard control strategy that demonstrates a reduced risk posture.
- All pre-requisites are met. System conditions established and LOTO applied, as necessary.
- Workforce is properly trained for the planned work.
- HRW Elements have been incorporated and proper mitigating actions have been taken.
- Extent of Field surveillance has been determined and the individual has been notified.

EXHIBIT 7

CLEARANCES FROM OVERHEAD POWER LINES FOR EXCAVATORS, BACKHOES, UN-INSULATED AERIAL LIFTS USED BY QUALIFIED OR UNQUALIFIED OPERATORS, SCAFFOLDS, AND SIMILAR EQUIPMENT		
VOLTAGE	MINIMUM CLEARANCE DISTANCE (ft/inch)	
	ENERGIZED	DE-ENERGIZED
0 TO 30 V	0 ⁽¹⁾	0 ⁽¹⁾
31 TO 50 V	3'6"	0 ⁽¹⁾
51 V TO 50 KV	10'0"	0 ⁽¹⁾
OVER 50 KV	10' + 0.4 INCH PER KV ⁽²⁾ for each KV over 50 KV	0 ⁽¹⁾

CLEARANCES FROM OVERHEAD POWER LINES FOR INSULATED AERIAL LIFTS USED BY QUALIFIED ⁽³⁾ OPERATORS
See Table S-5 of 29 CFR 1910.333

CLEARANCES FROM OVERHEAD POWER LINES FOR CRANES OR OTHER EQUIPMENT USED FOR LIFTS & RIGGING		
VOLTAGE	MINIMUM CLEARANCE DISTANCE (ft/inch)	
	ENERGIZED	DE-ENERGIZED
0 TO 350 KV	20' ⁽⁶⁾	0 ⁽¹⁾
350 TO 1000 V	50'	0 ⁽¹⁾

A. NOTES

- (1) REQUIRES CARE DURING OPERATION TO AVOID CONTACT WITH AND DAMAGE TO UTILITY LINES
- (2) A MINIMUM DISTANCE OF 4 FEET MAY BE USED FOR VEHICLES IN TRANSIT WITH STRUCTURE/BOOMS LOWERED AND NO PERSONNEL ARE IN AERIAL BUCKETS.
- (3) QUALIFIED PERSONS – THOSE WHO HAVE HAD TRAINING IN ACCORDANCE WITH OSHA STANDARDS IN 29 CFR 1910.332; ALSO APPLICABLE TO CONSTRUCTION ACTIVITIES.
- (4) UNQUALIFIED PERSONS – THOSE WHO ARE NOT QUALIFIED AS DESCRIBED IN (3) ABOVE.
- (5) ANY DEVIATION FROM THESE CLEARANCES REQUIRES WRITTEN APPROVAL FROM THE SITE SAFETY OFFICE.
- (6) MINIMUM DISTANCE MAY BE REVISED PER SUBPART CC OF 29 CFR 1926.

Exhibit 8

Distances for Excavations On or Near Underground Utilities **

The primary emphasis must be to de-energize/inert underground utilities prior to beginning excavation work.

Utilities	Minimum Working Distances – Hand Digging (Feet)	Minimum Working Distance – Excavation Equipment (Feet)		
		Work on Utility	Work in Area of Utility	
Electrical Voltage Greater Than 150 V	Note 1 Energized Condition A	3	Not Allowed	4
	Note 1 Energized Condition B	Note 2 1.5 Note 4	Note 2 1 Note 4	Note 2 2 Note 4
	De-Energized	0	1	2
Electrical Voltage Less Than/Equal to 150 V	Energized	Note 2 1.5 Note 4	1 Note 4	2 Note 4
	De-Energized	0	1	2
Hazardous Utilities other Than Electrical	Energized	1.5 Note 4	Note 2 1 Note 4	Note 2 2 Note 4
	Note 3 De-Energized	0	1	2
Non-Hazardous Utilities		0	1	1

Notes:

1 – Condition A: Wire not in conduit

Condition B: Wire in conduit, concrete trench, etc.

2 – Distance may be reduced to 0 ft if utility has been previously located (soft dug) and marked or exposed.

3 – For conditions of pressure, flammable gases, or other potential personnel and property hazards, the lines must be secured and rendered harmless by relieving pressure, blanketing with inert gas, or other appropriate means.

4 – Excavation work that includes digging with Power Equipment within 3 feet of underground utilities containing potential Hazardous Energy, or when a person must enter a excavation 5 feet or more in depth, are defined as High Risk Work (HRW) and requires Buyer Authorization (EXHIBIT 6A).

** Any deviation from distances other than those covered by Note 4, requires written instructions concurred with by the Sub-Division Manager KAPL/KSO Construction.

EXHIBIT 9
SILICA PROCEDURE

The following provides the type of information that should be included in a silica procedure. The purpose of this procedure is to provide a description of the type of work that will be performed and to describe the work controls that will be utilized to prevent personnel from exceeding the applicable Occupational Exposure Limits (OEL) for airborne crystalline silica.

Project: Provide a brief description of the project.

Location: Provide location of the silica work (Bldg. #, Room #, etc.)

Expected Duration of Project: Provide expected duration of silica work (i.e., <4 hrs. full day, multiple days).

Scope of Work:

The scope of work shall describe the type of work that may disturb concrete or other crystalline silica containing material or is involved in mixing dry concrete to produce mortar. A separate silica procedure should be developed for each process method. Examples of work that will require a silica procedure include, but are not limited to, mixing mortar and operations which disturb concrete such as drilling, chipping, cutting, grinding, or core drilling.

Work Steps & Controls:

This section should include information about the amount of material that will be mixed, disturbed, etc. For example, if the work evolution involves drilling holes into a concrete floor, information such as the number of holes to be drilled, the depth of the holes, the diameter of the holes, the type of drill that will be used and the duration of the work should be included in the silica procedure. Likewise, if a saw will be used to cut concrete, this section should include information such as the amount of concrete that will be cut and the type of saw that will be used and if water methods to control airborne dust are to be utilized.

This section should also provide a description of the controls that will be utilized to prevent personnel from exceeding the applicable Occupational Exposure Limit (OEL) for silica both during the work evolution as well as during clean up of residual material when the work has been completed. For example, wet methods typically should be used to prevent silica particles from becoming airborne. If wet methods are impractical or would damage construction surfaces, a DOP tested HEPA vacuum with a shroud on the suction end can also be utilized. Additional controls that will be used should also be described. These may include personal protection equipment (PPE) that will be worn by the worker (i.e. gloves, safety glasses, hearing protection, respirator) and/or control boundaries that will be erected during the work evolution.

Where appropriate, action levels and/or stop work limits shall be included in the procedure. Action levels are a predetermined limit on work where work is stopped and can be reengineered in the field to mitigate the exposure before work begins again. Stop work limits are a predetermined limit on work where work is stopped and prior approval by the buyer is required before mitigating actions can be taken and the work resumed. Both action levels and stop work limits, when included in the procedure, shall specify the actions to be taken when either/ both are reached.

Exposure Assessment & Training:

This section should indicate that the work controls outlined in the procedure will maintain employee exposures below the applicable OEL for silica dust and that all employees working to this procedure have been provided with hazard communication training regarding inhalation of silica dust in accordance with 29 CFR 1910.1200.

Seller Representative

Date

Notes:

- Exposure monitoring is the preferred method to demonstrate that the proposed work controls will maintain employee exposures below the applicable OEL for silica dust. If the Seller's Representative is unable to ensure that employee exposures can be maintained below the applicable OEL for silica dust, respiratory protection will be required.
- If any visible dust is observed, the silica controls in place will likely be deemed insufficient.

EXHIBIT 10

ASBESTOS CONTROL REQUIREMENTS

- I. Purpose - This exhibit specifies the requirements for working with asbestos-containing materials.
- II. Scope – The contents of this exhibit shall be applied in total or in part to work involving any of the following asbestos-containing materials:
- a. Ventilation duct insulation
 - b. Building insulation
 - c. Thermal System Insulation
 - d. Fire-proofing material sprayed or spread on structural members
 - e. Cement-asbestos wall materials, roofing, siding and piping
 - f. Floor tile
 - g. Gasket
 - h. Roofing
 - i. Other forms as identified in the BMPC Technical Specification

The Subcontractor shall use the parts of this Exhibit applicable to the work identified in the BMPC technical specifications; the parts of this exhibit used shall be included in the procedures required by IV.A of this Exhibit. For example, work involving thermal system insulation or other friable asbestos-containing material, will require application of this exhibit in its entirety and the application of 29 CFR 1926.1101. By contrast, work involving painted cement-asbestos materials should require only wet methods, taping or painting of newly exposed edge surfaces, and wearing of gloves provided no cutting, drilling, sanding or other abrasive actions are performed.

Regardless of the degree of control judged necessary by the Subcontractor, the procedures and permits described in IV.A of this Exhibit and the methods of compliance as required by 29 CFR 1926.1101 for each class of asbestos work shall be required. Regardless of the classification of work being performed, before starting any asbestos job, an initial exposure assessment shall be performed and provided to BMPC Industrial Hygiene for approval. The assessment shall be in writing and include all elements and considerations required by 29 CFR 1926.1101.

- III. Evidence of Experience – The Subcontractor shall provide BMPC with satisfactory evidence of the Subcontractor's experience and training in performing asbestos abatement, renovation, and/or maintenance work of the type and scope described in the technical specification.
- A. Subcontractor shall demonstrate prior experience on asbestos projects of the same type and scope through the submission of descriptions of (three) 3 previous projects, their locations, engineering and work controls employed, and records of air monitoring data generated during each project.
 - B. Subcontractor shall submit a notarized statement, signed by an officer of the company, containing the following information for work performed during the past five (5) years:
 - 1. A record of any citations issued by Federal, State, or Local regulatory agencies relating to asbestos abatement, renovation, or maintenance activities. Include projects, dates and resolutions.
 - 2. A list of penalties incurred through non-compliance with asbestos project specifications including liquidated damages, overruns in scheduled time limitations and resolutions.
 - 3. Situations in which an asbestos-related contract has been terminated including projects, dates and reasons for terminations.
 - 4. A listing of any asbestos-related legal proceedings/claims in which the Contractor (or employees scheduled to participate in this project) have participated or are currently involved. Include descriptions of role, issue and resolution to date. BMPC shall be provided all information required in this section in writing, to be submitted with the vendor's bid proposal.
- IV. Execution – The work on asbestos-bearing materials shall be done in accordance with the following steps:
- A. All operations involving Class I, II, III, and IV asbestos work (including roof work) shall be performed in compliance with 29 CFR 1926.1101 (OSHA Construction Industry Asbestos Standard). In addition, work shall be accomplished in accordance with designs, engineering controls, work practices, and detailed work procedures for performing asbestos work and prepared by the Subcontractor and submitted for BMPC's approval at least ten (10) business days before the work is scheduled to commence (or as otherwise required by the BMPC Technical Specifications). An Asbestos Work permit is required as described by Part II.S, of Specification S-12.
 - B. Employee Qualifications
 - 1. The Subcontractor shall ensure that his employees are qualified to work with the designs, methods, and materials to be used and procedures he prepared. Subcontractor employees shall have current EPA Asbestos Certificate for the class of work to be performed or equal as approved by BMPC.
 - 2. The Subcontractor shall certify in writing to BMPC that all persons who will perform asbestos work conform to the training and medical examination requirements of 29 CFR 1926.1101.

3. The Subcontractor asbestos supervisor shall have successfully completed the EPA Course "Asbestos Supervisor/Contractor". An annual refresher course is required.
4. The Subcontractor shall assign one individual to each asbestos work location to perform the duties of the "competent person". This person shall have successfully completed the EPA course "Asbestos Supervisor/Contractor". Annual refresher is required.

C. Work Practices and Engineering Controls

1. All work involving asbestos-containing material shall be performed using a control method listed in 29 CFR 1926.1101. such methods shall be approved by BMPC before work begins.
2. The work practices and engineering controls described in 29 CFR 1926.1101 and all appendices shall be considered mandatory unless otherwise approved by BMPC.
3. Glove bag containments or mini-enclosures with HEPA-filtered exhaust ventilation shall be employed for all removals of asbestos-containing pipe and duct insulation except where the technical specification states that another control method must be used or as otherwise approved by BMPC glove bags shall be 10 mil minimum thickness or as approved by BMPC.
4. Installed containment enclosures shall be inspected, smoke tested, and approved by the Subcontractor "competent person" prior to initial use and at least daily when in use. Subsequent to the Subcontractor competent person inspection and testing, authorization to begin work shall be obtained from BMPC before use and at least daily when in use. All regulated work areas shall be roped or bounded by walls and signs prominently posted as required by 29 CFR 1926.1101.
5. The Subcontractor shall supply high efficiency particulate air (HEPA) filtered vacuum cleaners and HEPA filtered negative air units for use in all asbestos work areas as required in 29 CFR 1926.1101. Each vacuum cleaner and HEPA filtered negative air unit shall be at least 99.97% efficient for filtration of 0.3 micrometer dioctyl phthalate (DOP) particles. This efficiency must be determined by a DOP test. The HEPA filters installed in vacuum cleaners shall be sealed and labeled stating when each unit (vacuum cleaner and HEPA filter) was DOP tested. The seal shall be wired, taped or banded to the unit and installed such that the seal must be broken to remove the filter. The Subcontractor shall submit in writing that the units meet the required DOP tests. Once tested, each unit will be considered certified for a twelve-month period. If the vacuum cleaner(s) become full and require change-out, the change-out shall be done at the Subcontractor's off-site location or at BMPC in accordance with a procedure prepared by the Subcontractor and approved by BMPC. For off site change-outs, the waste shall be handled in accordance with 29 CFR 1926.1101 and disposed of in an EPA/State-approved disposal facility.

D. Personal Protective Equipment

1. Subcontractor personnel performing work involving the potential for generation of asbestos dust and all Class I and Class III asbestos work involving thermal system insulation (TSI) shall wear a HEPA filtered, tight-fitting full-face piece, powered air purifying respirator (PAPR), except as specified by the technical specification or approved by BMPC Industrial Hygiene. Other Class II, III, and IV work, respiratory protection requirements shall be in accordance with 29 CFR 1926.1101 and 29 CFR 1910.134 or as required by BMPC technical specifications, or as directed by BMPC Industrial Hygiene. Respirators with a higher protection factor must be worn when required by 29 CFR 1926.1101 or 29 CFR 1910.134, and may be used at any time if the Subcontractor so desires. Half-mask respirators are permitted for asbestos work only with written approval of BMPC Industrial Hygiene. Respirator permits are required in accordance with Part II.R of Specification S-12.
2. Subcontractor personnel performing work involving the potential for generating asbestos dust, and all Class I and Class III work involving TSI shall wear full protective clothing, hoods, gloves, shoe covers and respiratory protection as required by IV.D.1 above. Other Class II, III, and IV work respiratory protection requirements shall be in accordance with 29 CFR 1926.1101 or as required by BMPC technical specifications. Protective clothing shall be removed upon exiting the posted asbestos work area, disposed of as asbestos waste, and not reused.
3. The Subcontractor's procedures required by IV.A above shall identify the specific personal protective equipment to be required for the Subcontractor's employees for the work identified.

E. Air Monitoring

1. The Subcontractor is required to perform all personal, environmental, and clearance air sampling. For all analyses, the Subcontractor is responsible for obtaining the services of an independent laboratory successfully participating in the Proficiency Analytical Testing (PAT) program administered by the American Industrial Hygiene Association (AIHA), evidence of which shall be submitted to BMPC for approval, and approved by BMPC. For analyses of clearance samples and perimeter environmental samples taken to determine exposure levels for individuals outside of the controlled asbestos work area, the Subcontractor must obtain the services of an independent laboratory accredited by the AIHA. The Subcontractor's sampling and analysis program must use OSHA and NIOSH-recommended techniques and be in accordance with the requirements of 29 CFR 1926.1101, and the following detailed items. The Subcontractor will be provided the opportunity to perform pre-work "baseline" air sampling, if desired, to verify that required clearance air sample levels are achievable given the pre-existing conditions of the asbestos workplace(s).
2. In the absence of other information, all fibers on air sample filters shall be counted as asbestos provided they meet the requirements of Appendix A of 29 CFR 1926.1101. If non-asbestos interfering fibers are known or suspected to be present, the analysis laboratory may perform fiber characterization (distinction between asbestos and non-asbestos fibers) by a method

for which the laboratory has demonstrated competence and which meets BMPC's approval. When fiber characterization is performed, all references in this exhibit to fibers (e.g., fibers per cubic centimeter) shall be understood to mean ASBESTOS fibers.

3. The following air monitoring requirements apply for each work shift at each workplace where potentially dust-generating asbestos work is being performed:
 - a. Personal air samples are required for all Subcontractor personnel in the regulated area while asbestos work is in progress. The samples shall be drawn for the duration of the work during that shift.
 - b. For Class I asbestos projects involving the removal of > 25 linear feet of TSI or > 10 square feet of surfacing material, or any amount, type, or class of asbestos work that does not receive a "negative exposure assessment" at least two air samples are required each shift outside the work area, once asbestos work is initiated. One sample shall be located at the entrance to the clean change room and one at the exhaust of the portable ventilation system (if a portable ventilation system is used or as otherwise directed by BMPC). One of these shall be at the entrance to the work decontamination enclosure, if it exists. Appendix F to 29 CFR 1926.1101 shall be followed for all work where a decontamination enclosure is required (clean room, shower, equipment room).
 - c. For Class I work involving < 25 linear feet of TSI or < 10 square feet of surfacing material at least one boundary air sample is required each working shift outside of the work area, once asbestos work is initiated, if the asbestos work is located inside a building or structure. Airborne asbestos fiber concentrations outside the asbestos regulated area shall be maintained at or below 0.01f/cc, unless otherwise approved by BMPC. If work is to be performed outdoors, no boundary air samples are necessary.
 - d. Excursion sampling is required for all Class I asbestos work involving greater than 25 linear feet of TSI or greater than 10 ft² of surfacing ACM or where a negative exposure assessment has not been obtained that will take 30 minutes or greater to perform. Sampling shall be in accordance 1926.1101.
4. Air sample results shall be reported to BMPC within 24 hours of sample collection. Written reports of the results of all air monitoring shall be provided to BMPC with five (5) working days.
5. "Termination" air samples are samples used to determine if the workplace can be released for unrestricted access at the conclusion of asbestos work. For work performed in glove bags or similar complete localized enclosures, a single air sample of at least 1650 liters volume shall be taken in the immediate vicinity of the enclosure during the final two hours of work. If the work operations are expected to be less than two hours, the sample shall be drawn for the entire job and allowed to run until 1650 liters of air have been sampled and the analysis result must be less than or equal to 0.01 f/cc. Termination air sampling may be waived by BMPC if the results of all air samples required during the work evolution (e.g., personal, environmental) are less than or equal to 0.01 f/cc.
6. Additional air monitoring in the vicinity of the work may be performed by BMPC. This in no way substitutes for air samples required by the Subcontractor, by 29 CFR 1926.1101, or this specification.
- F. Personal protective equipment, waste bags, and components of containment enclosures shall not be yellow or orange in color except where approved by BMPC.
- G. Waste asbestos material shall be packaged and stored as specified by the Buyer's Representative. When filling drums, any remaining void space in the container shall be filled with Speedi-Dri or a similar inert absorbent material before the drum is sealed. For other types of containers, no more than 20% void space shall be allowed, without BMPC approval. The Subcontractor shall transfer the containers to an on-site waste storage location designated by the Buyer's Representative. Asbestos waste will be disposed of by BMPC unless specified by the BMPC technical specifications. If disposal of waste asbestos material by the Subcontractor is specified, disposal of such material shall be in an EPA/State approved disposal facility. A copy of the asbestos waste shipment record shall be provided to BMPC upon return from the waste disposal facility. The Subcontractor performing asbestos work shall meet all requirements specified in applicable sections of Subpart M in 40 CFR 61 except for 40 CFR 61.146 (Notification Requirements), which will be performed by BMPC.
- H. For Class I asbestos projects involving the removal > 25 linear feet of TSI or > 10 square feet of surfacing material, or any amount, type, or class of asbestos work that does not receive a "negative exposure assessment" or as specified in the technical specification, the following additional requirements shall apply:
 1. The work shall be accomplished in accordance with an asbestos abatement plan and procedure prepared by the Subcontractor and submitted for BMPC's approval at least 60 days before the work is scheduled to commence (or as otherwise specified in the BMPC technical specifications). The plan and procedure shall be detailed and include the information listed in Appendix F of 29 CFR 1926.1101.
 2. Unless approved by BMPC, all work shall be done in accordance with the recommendations of Environmental Protection Agency publications EPA 560/5/85-24, "Guidance for Controlling Asbestos-Containing Materials in Buildings" (the "purple book").
 3. Prior to the installation of any negative pressure enclosure the Subcontractor shall clean all surfaces in the designated work area. Cleaning shall be performed using damp rags and, as necessary, a HEPA filtered vacuum cleaner. Subsequent to

cleaning, the Buyer's Representative shall inspect the area and provide the Subcontractor with the approval to start erecting the enclosure.

4. The Subcontractor shall construct a HEPA-filtered negative pressure containment enclosure around the entire work area (walls, floors, and ceiling, if necessary) as described by 29 CFR 1926.1101, Appendix F and EPA Publication EPA 560/5/85-24. At least one redundant negative air generator unit shall be maintained on stand-by at the work location. The enclosure must be described in writing and approved by BMPC before any asbestos cleanup or removal work begins. The containment shall be constructed using 6 mil or thicker fire retardant plastic sheeting and fire resistant wooden materials. Plastic sheeting shall comply with NFPA Large Scale Test for Fire Resistance. Wooden materials shall be fire-protection impregnated in accordance with NFPA 703 or equivalent standards as approved by BMPC. Certification of these criteria shall be submitted to BMPC. Since plastic-covered walking/working surfaces will be slippery, the Subcontractor shall explain the method to be used for reducing slippery conditions, including working on ladders, and submit for BMPC approval.
 5. All work platforms in an asbestos containment, regardless of height, shall be provided with standard guardrails constructed to meet OSHA standards.
 6. Containments shall be provided with adequate lighting; as a minimum, 20 foot candles is required. Emergency lighting, such as battery-powered lanterns shall be provided in the event of power failure.
 7. Containments shall provide for a second (emergency) exit subject to BMPC approval. Adequate exit (arrow) signs shall be located to show the path of egress.
 8. Decontamination facilities and practices for employees shall be in accordance with 29 CFR 1926.1101, Appendix F (such hygiene facilities shall consist of an equipment room, shower, and clean room).
 9. Portable shower facilities for Subcontractor employees, as described by Appendix F of 29 CFR 1926.1101 must be provided by the Subcontractor. Shower water and all other potentially contaminated waste water must be filtered through 5 micrometer or smaller filters prior to disposal as directed by the Buyer's Representative. Shower water shall not be discharged into storm drains. Filters shall be disposed of as asbestos waste.
 10. The negative-pressure containment enclosure constructed by the Subcontractor shall include transparent viewing windows sufficient to allow observation within the enclosure as directed by BMPC.
 11. To the extent feasible, unless approved by BMPC in writing, thermal system insulation removals inside the negative-pressure containment enclosure shall be performed using glove bag enclosures or other control methods listed for Class I removals (and approved by BMPC). All such containments shall be smoke tested, inspected, and the inspection documented for BMPC approval before use. Glove bags inside negative pressure containments shall not require smoke testing and inspection, provided that the negative pressure containment has been smoke tested, inspected, and the inspection documentation has been approved by BMPC. At no time shall loose asbestos debris be allowed to accumulate in the negative pressure containment enclosure.
 12. At the conclusion of the work, the Buyer's Representative must confirm that no visible dust remains and no potentially contaminated materials remain within the containment enclosure. If dust is found, the work area must be recleaned.
 13. Clearance air monitoring shall be performed after the work site has passed visual inspection as follows:
 - a. Unless otherwise required by the BMPC technical specifications, the sampling and analysis instruction of Appendix M of EPA 560/5-85/024 shall be followed and at least five (5) samples shall be taken using "aggressive sampling" techniques as described in that appendix. Analysis shall be by phase contract microscopy (NIOSH 7400 method) with fiber characterization allowed as described in Section E.2 of this section.
 - b. The workplace shall be considered ready for removal of the plastic sheets covering the floors, walls, and other surfaces, only after all surfaces inside the containment enclosure have been thoroughly cleaned (HEPA vacuum and wet wipe) and the work area has passed a visual cleanliness inspection performed by the Buyer's Representative and Industrial Hygiene.
 - c. Remove all plastic sheets (first layer) covering floors, walls, and other surfaces. With only critical barriers separating the workplace from the rest of the building (e.g., plastic sheets covering doors, vents, and windows), clean and inspect newly exposed surfaces per Step 13.b. above.
 - d. Wait 12 hours for drying.
 - e. Perform clearance air monitoring in accordance with Step 13.a. above.
 - f. The workplace shall be released if every sample value is less than or equal to 0.01 f/cc. If that value is not obtained, the area shall be recleaned and sampled.
- i. The Subcontractor shall ensure that adequate safeguards minimizing electrical hazards are implemented during the course of this work. The use of water (spray) combined with electrical equipment requires special care. All electrical equipment used in asbestos abatement operations must be protected by ground fault circuit interrupters (GFCIs).

EXHIBIT 11
Seller Waste Process Evaluation List

Seller's Name:

Work Location:

Cognizant Employee:

Processes ¹	Consumables / Substances Used ²	Hazardous Constituents Involved / Basis ³	Waste Generated / H, NH or R ⁴	Storage Instruction ⁵	Disposal Path ⁶

Legend

1. Describe the waste generating process (i.e., change of instrument light bulbs)
2. Input the product used in the process (i.e., incandescent light bulbs)
3. Input the hazardous constituent(s) (i.e., lead, cadmium, PCBs, etc.) / Provide basis for determination (MSDS, Process knowledge or Analytical Sampling)
4. Input type of waste generated (i.e., rags, incandescent light bulbs, spent solvent, etc. / Indicate Hazardous (H), Non-Hazardous (NH) or Recyclable (R)
5. Input special storage requirements (i.e., store in a DOT container with a PCB and waste Identification Label affixed and in a posted Waste Accumulation Area (WAA)) for hazardous waste only. A WAA established for hazardous waste shall be posted at or near the point of generation. Notify Buyer before generating chemical or hazardous waste. Buyer will establish a WAA for hazardous waste and provide appropriate waste containers and labeling as required.
6. Input appropriate disposal path (i.e., regular trash, waste pickup by Buyer, scrap metal, etc.)

EXHIBIT 12

Procedure for Refueling Subcontractor Vehicles/Equipment

All employees who will handle, use, or store petroleum products have been trained relative to the use, handling, required personal protective equipment (PPE), and waste/disposal provisions as indicated on the MSDS in accordance with Hazard Communication provisions and S-12 Requirements.

It should be noted that the preferred method for refueling subcontractor vehicles or equipment is off-site, however when refueling off-site is impractical or impossible, on-site refueling is allowed if prior STR approval is obtained.

Vehicle/Equipment Placement

All Vehicles/Equipment must either be parked on pavement/asphalt/concrete/impervious surface or in a revetment area large enough to contain a petroleum spill caused by refueling. Tanker truck or Pick-up truck with refueling tank must be in good working order with no leaks and/or drips.

Objective

Refueling operations shall be conducted in such a manner to prevent the spill of material on the ground and/or impervious surface (i.e. plastic).

Work Steps

Steps 3 through 5 must be performed in order or as directed by the project OSSR.

1. Each employee will wear appropriate PPE for refueling operations: at a minimum safety glasses and work gloves.
2. Spill clean-up materials (i.e. absorbent pads) must be readily available at the refueling location.
3. Turn-off the Vehicle/Equipment. Vehicle/Equipment should either be parked on pavement/asphalt/concrete/impervious surface or in a secondary containment with sufficient volume to contain a petroleum spill caused by refueling.
4. Remove the gas cap and begin refueling operations. Care should be taken to ensure vehicle/equipment is not over filled. **Personnel should be aware that temperature changes may affect the fuel level in vehicles/equipment and should not over fill the vehicle/equipment.**
5. Replace the gas cap, ensure the cap is tight and seals the storage tank prior to operating the vehicle/equipment. **If at any time during refueling operations petroleum product is spilled on the ground and/or impervious surface the subcontractor must STOP WORK and notify KAPL immediately.**

By my signature, I indicate that I concur with the procedure and have conducted a pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed and all workers will be or have been briefed prior to working to the procedure.

Seller Representative: _____ Date/Time: _____

EXHIBIT 13

IDENTIFICATION OF CURRENT SUBCONTRACTOR EMPLOYEES WITH BERYLLIUM-EXPOSURE HISTORY

A Department of Energy (DOE) regulation, 10 CFR Part 850, requires that a Chronic Beryllium Disease Prevention Program (CBDPP) be implemented at all DOE Sites where there are current employees who have been exposed to airborne beryllium at DOE Sites. Such persons are referred to as beryllium-associated workers and include employees of Subcontractors at DOE Sites. This program does not apply to persons who were exposed to airborne beryllium but are no longer employed at DOE Sites.

One requirement of the CBDPP is that medical surveillance for beryllium-related disease and information regarding the disease be offered to each beryllium-associated worker (although the worker is not required to take the medical examination). The regulation requires that the worker's employer provide the medical surveillance and information. BMPC will provide these medical evaluations and information for Subcontractor beryllium-associated workers.

Every BMPC Subcontractor performing work on a BMPC Site must identify each employee who has had exposure to airborne beryllium as described above. For that purpose, the attached questionnaire (attachment 1) is provided for the Subcontractor to give to each Subcontractor employee who is expected to work, or has worked on five (5) or more days on a BMPC Site to determine if past beryllium exposure has occurred. The Subcontractor is then required to identify to the BMPC Buyer's Representative all employees stating they know or believe that they may have been exposed to airborne beryllium at BMPC or any other DOE Site, using attachment 2. Note: In order to comply with Federal regulations, each employee who answers "yes" (response a or response b) to question 2 of attachment 1 shall be identified to BMPC even if the employee declines to participate in the medical surveillance program. This will enable BMPC to discuss and clarify the employee's beryllium-exposure history and to provide the employee with required information about the CBDPP if he or she should decide in the future to participate in the program. Attachment 2 is not required to be submitted to BMPC if no Subcontractor employees answer "yes" to question 2 of Attachment 1.

QUESTIONNAIRE ABOUT EXPOSURE TO AIRBORNE BERYLLIUM AT A
DEPARTMENT OF ENERGY SITE

Employee's name: _____ Date: _____

A Department of Energy (DOE) regulation, 10 CFR Part 850, requires that a Chronic Beryllium Disease Prevention Program (CBDPP) be implemented at all DOE Sites where there are current employees who have been exposed to airborne beryllium at DOE Sites. Such persons are referred to as beryllium-associated workers and include employees of Subcontractors at DOE Sites. This program does not apply to persons who were exposed to airborne beryllium but are no longer employed at DOE Sites.

One requirement of the CBDPP is that medical surveillance for beryllium-related disease and information regarding the disease and the CBDPP be provided to each beryllium-associated worker (although the worker is not required to take the medical examination). The regulation requires that the worker's employer provide the medical surveillance and information. BMPC will provide these medical evaluations and information for Subcontractor beryllium-associated workers.

You are being asked these questions to find out if you were exposed to airborne beryllium at the Bechtel Marine Propulsion Corporation or any other Department of Energy (DOE) Site in the past. This is an information survey only. It has no impact on any rights you may have under the CBDPP.

Beryllium is a material that can produce serious chronic (long-term) disease in some people and Subcontractor employees at BMPC will be offered medical surveillance for the disease and information about beryllium if they were exposed to airborne beryllium at a DOE Site. It is important to understand that you do not have to take any medical examinations if you do not wish to. You are asked to complete this questionnaire, however, to help determine if you should be offered the opportunity to participate in the medical surveillance program and so that information about the beryllium disease program can be provided to help you make your decision if medical surveillance is offered to you. For these reasons, the information provided in this questionnaire may be shared with the Bechtel Marine Propulsion Corporation.

Question 1:

Have you ever worked at the BMPC Knolls Site or any other DOE Site in the past?

_____ Yes _____ No

If your answer is yes, please answer question 2. If your answer is no, you have finished the questionnaire.

Question 2:

Do you know or believe that you were exposed to airborne beryllium at BMPC or any other DOE Site?

(a) _____ Yes, I was exposed to airborne beryllium at a DOE Site. Please proceed to Question 3.

(b) _____ Yes, I believe I may have been exposed to airborne beryllium at a DOE Site.
Please proceed to Question 3.

(c) _____ I am not aware of being exposed to airborne beryllium at a DOE Site. If your answer is (c), you have finished the questionnaire.

Question 3:

If answers (a) or (b) were checked in question 2, please provide the following information for each instance where you believe that you were exposed to airborne beryllium:

Name and location (city and state) of the DOE Site:

Time period when your beryllium exposure may have occurred
(for example, February 1987 to October 1989):

The part of the DOE Site where you believe you were exposed to airborne beryllium
(building and room, site area, project, etc.):

The work you did when you believe you were exposed to airborne beryllium:

The name of the company you worked for when you believe you were exposed to airborne beryllium:

Are you currently in a beryllium medical surveillance program? If yes, please identify the provider of the program.

**BECHTEL MARINE PROPULSION CORPORATION
SUMMARY OF BERYLLIUM EXPOSURE HISTORY SURVEY**

From: _____

(Company name)

(Company address)

Contact person: _____ Telephone number: _____
Fax number: _____

Contract number: _____

Project description:

The BMPC beryllium exposure history questionnaire (Exhibit 13 to BMPC Specification S-12) has been provided to each employee who is expected to work or has worked at a BMPC Site on five (5) or more days on the contract identified above. The following persons identified by this survey believe they were or may have been exposed to airborne beryllium at DOE Sites:

Completed questionnaires about exposure to airborne beryllium at a Department of Energy Site are attached for the employees identified above.

The Exhibit 13 questionnaire will continue to be administered to each new employee working at a BMPC Site on five (5) or more days under this contract and the information in this summary will be updated when a new employee reports that they believe they were exposed or may have been exposed to airborne beryllium at a DOE Site.

Signature of company representative: _____ Date: _____

Return this signed form to the BMPC Buyer's Representative. *

***Note:** It is not necessary to complete this form and return it to the BMPC Buyer's Representative if all Subcontractor employees believe they have had no exposure to airborne beryllium at DOE Sites.

EXHIBIT 14

ENERGIZED ELECTRICAL WORK PLAN

ORGANIZATION NAME _____

JOB/TASK: _____

DATE PLAN WAS PREPARED _____

I. Qualified Person Preparing the Plan (Please print) _____

II. Work Evolutions that may be performed under this energized electrical work plan include:
(List Evolutions, be specific) _____

III. List the maximum voltage(s) (AC/DC) on all energized electrical conductors, components or parts (Phase to Phase) involved in this work.]

IV. How work is to be performed: (Check all that apply)

- Work is to be performed energized; however, all energized parts are suitably guarded and/or insulated.
- Work is to be performed energized; however, all energized parts are suitably interlocked.
- Work is to be performed near* energized electrical parts**
- Work is to be performed on energized electrical parts**
- Other (Specify) _____

* Near is defined as not less than the approach distances for Qualified Employees given in Table S-5 in 29 CFR 1910.333.

** Justification for Performing Work Energized: (Provide written justification for performing work on or near energized electrical components. (Must be approved by the Subsection Manager of the requesting organization.)

Approved: _____
Subsection Manager/Date

Approved: _____
Safety/Date

ENERGIZED ELECTRICAL WORK PLAN (Continued)

V. Control Scheme: (Check all that apply)

- Remove all conductive materials & equipment that are in contact with worker's body
- Use insulated tools & equipment (insulated for the voltages being worked)
- Personal Protective Equipment (Check all that apply)
 - Insulated rubber gloves (Denote Class 0-4 _____, electrically tested within previous 6 months. Last test date _____)
 - Glove protectors
 - Insulated rubber sleeves (Denote Class 0-4 _____, electrically tested within previous 6 months. Last test date _____)
 - Head Protection (ANSI Z89.1, Denote Class G or E _____)
 - Eye Protection (ANSI Z87.1, non-conductive frames only)
 - Face Protection (ANSI Z87.1), with eye protection (safety glasses)
 - Foot Protection (ASTM F 2413-05, non-conductive soles)
 - Fire Resistive Clothing
- Protective shields, barriers and insulating material (Check all that apply)
 - Line hoses (Denote Class 0-4 _____)
 - Insulating blankets (Denote Class 0-4 _____, electrically tested within previous 12 months. Last test date _____)
 - Insulating mats (Denote Class 0-4 _____, electrically tested within previous 6 months. Last test date _____)
- Portable ladders with non-conductive side rails (wood or fiberglass only)
- Alerting Techniques (Check all that apply)
 - Safety signs ("Danger – Electrical Hazard")
 - Barrier tape (red & white only)
 - Attendants
- Unusual Hazardous Electrical Work (e.g., physically damaged equipment)
 - Person manning telephone (if necessary) stationed by circuit breakers/switches to de-energize equipment immediately in case of an emergency.
 - Safety line or equivalent (if necessary) around worker and tended by a safety watch.
- Insulated bucket truck (Electrically tested within the past 12 months. Last test date _____)
- Other (Specify) _____

Control Scheme Specifics:

ENERGIZED ELECTRICAL WORK PLAN (Continued)

VI. Training/Job Briefing

- a. All employees working to this plan have been trained in electrical safety-related work practices and are electrically qualified (29 CFR 1910.332).

(Signature of person certifying the training has been provided)

- b. All employees working to this plan have been trained in the control of hazardous energy sources (lockout/tagout) and are authorized employees (29 CFR 1910.147).

(Signature of person certifying the training has been provided)

- c. All employees working to this plan have been trained and are currently qualified in Cardio-Pulmonary Resuscitation (CPR).

(Signature of person certifying the training has been provided)

- d. All employees working to this plan have been briefed to the plan.

(Signature of person certifying the briefing has been provided)

VII. Comments:

VIII. Signature

Qualified Person Preparing Plan Name/Title

EXHIBIT 15
Elevated Work Procedure (EWP)

ORGANIZATION NAME _____

ELEVATED WORK PROCEDURE FOR (Job) _____

DATE PROCEDURE WILL EXPIRE: _____

(EWP is valid for 12 months from date signed by Fall Protection Competent/Qualified Person)

I. Fall Protection Competent Person (Print):

(For this EWP)

II. Work Evolutions that may be performed under this EWP include:

III. Location and Area Features: (Describe the location and area features. Example – Bldg. 6 roof, the north, south, east and west leading edges are unprotected. Provide a sketch, drawing or photos.)

IV. Fall Protection System(s) to be Used: (Check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Temporary Guardrail System | <input type="checkbox"/> Warning Line System |
| <input type="checkbox"/> Restraint Device System | <input type="checkbox"/> Safety Monitoring System* |
| <input type="checkbox"/> Positioning Device System | <input type="checkbox"/> Other (Specify) |
| <input type="checkbox"/> Personal Fall Arrest System | _____ |

*To use a Safety Monitoring System alone (except for warning line installation), the Site Safety Organization's written approval is required.

Safety Organization Date

V. Fall Protection System Specifics: (Attach sketch, drawing, or photos)

VI. Anchorages for Personal Fall Arrest Systems, Positioning Device Systems, or Fall Restraint Systems:

- a. Identify the Anchorages _____

- b. Number of people that must be supported _____
- c. Evaluation/basis of anchor point use: _____

- d. Signature of Fall Protection Competent Person who identified/approved the non certified anchorage(s), or the Fall Protection Qualified Person who approved the certified anchorages.

Signature _____ (Competent Person / Qualified Person)

Note: Anchorage analysis/calculations that are performed shall be included or referenced and maintained as part of the EWP.

VII. Rescue Procedures: (required for PFAS and Positioning Device Systems)

VIII. Approvals:

Fall Protection Competent Person Preparing EWP **Name/Signature/Date**

Safety Organization **Name/Signature/Date**

Attachment (1) to EXHIBIT 15:

Instructions for Completing the Elevated Work Procedure Form

The Elevated Work Procedure (EWP, EXHIBIT 15) shall be filled out in its entirety prior to any work which requires an EWP (i.e., work on elevated surfaces greater than 6 feet above the next lower level that are not protected by a standard guardrail system or equivalent; see S-12, Part III, Section J). Scaffold erection/disassembly where there is a fall hazard of 6 feet or more also requires the preparation of a EWP, even in cases where it has been determined that it is not feasible to provide fall protection. The High Risk Work (HRW) requirements of S-12, Part I, Section E and EXHIBITS 6, 6A and 6B also apply to this work. Technical changes to an EWP at a minimum require signed approval by the Seller's Competent Person and Buyer's Safety Organization. These instructions are not required to be included in the work document or submittal for approval.

Fill in the name of the organization (Seller's name), the job number or Project name, and date the EWP will expire (normally 12 months from date signed off by the Fall Protection Competent Person/Qualified Person).

- I. **Fall Protection Competent Person:** Identify the Competent Person preparing the EWP.
- II. **Work Evolutions:** This section shall include a detailed listing of all work to be performed under the EWP. Movement of materials onto/from the elevated work surface to support the work evolution or the establishment of fall protection, if necessary, shall be identified as part of the work scope. Sufficient detail is required such that the Buyer can fully evaluate the fall protection scheme for each work evolution. For example: Do not simply state "Steel Erection"; instead state "Steel erection, including the installation of steel columns, girts, beams, floor joists, tie-bars, sheet metal decking, stair stringers, stair pans and handrails." **Note: Work evolutions that are not listed in this section will not be allowed to proceed until the EWP has been revised and approved by the Buyer.**
- III. **Location and Area Features:** This section shall include a detailed description of where the elevated work will take place (Site, Bldg. #, and specific area(s) to be worked). Features of the work area including all fall hazards (floor or wall openings, stair openings, ladder ways, etc.) and associated fall distances, and any natural fall protection barriers in place shall be included in this section. The area must be described in sufficient detail such that the workgroup as well as the reviewer of the EWP can clearly understand the nature and location of all fall hazards to a lower surface, equipment or structure. Additionally, structures or equipment that present a hazard of striking against in the event of a swing fall shall be identified. An adequate level of detail on the required accompanying sketch, drawing or photos may be sufficient to provide this information. In this case "see accompanying sketch" or similar language may be used to satisfy the requirements of this section. **Note: Locations that are not included in this section will not be allowed to be worked until the EWP has been revised and approved by the Buyer.**
- IV. **Fall Protection System(s) to be Used:** Mark the types of fall protection systems to be employed by this EWP. The box for guardrail systems is to identify the installation and use of a temporary guardrail system.

When specifying fall protection systems to be utilized, the Competent Person shall consider engineering out the fall hazard first (i.e., use of guardrail systems, covers, scaffolds, aerial lifts, etc.) followed by use of the hierarchy of fall protection systems from most protective to least protective systems [i.e., Fall Restraint, Positioning Device, Personal Fall Arrest System (PFAS), Warning Line System with a Safety Monitor, and a Safety Monitoring System alone] in that order. Safety Monitoring Systems are considered to be the least protective of the fall protection systems permitted. Therefore, specific review and written authorization by Buyer's Safety Organization shall be required whenever a safety monitoring system is used as the sole means of fall protection. This requirement does not apply when a Safety Monitoring System is selected as the fall protection control scheme for the protection of workers establishing or disestablishing a warning line or temporary guardrail system greater than 6 feet from a roof edge, provided that all other requirements are met.

- V. **Fall Protection System Specifics:** This section is used to describe the details of how the system(s) selected will be implemented (i.e., portable guardrails will be erected around the air-handling unit on all four sides per attached drawing, etc.). Provide a sketch, drawing, or photos that show pertinent work area features and representation of anchor points, equipment such as beam straps, beam anchors, roof anchors, lifeline assemblies, rope grabs, self retracting lifelines, lanyards, carabineers, etc. Sketches, drawings and photos shall be properly referenced in the written procedure indicating essential information of a system design that is not written elsewhere in the EWP. If more than one fall protection system is utilized, the work evolutions associated with those systems shall be clearly defined. In locations with a well-defined hazard for which the same controls will be effective in all cases, it is appropriate to allow generic work evolutions to be identified in this section; the instances where this applies are limited.

For PFAS, be specific as to the type [self-retracting lanyard (SRL), shock absorbing lanyard (SAL), or fixed length lanyard] of lanyard being utilized. In cases where specialized equipment is used or when a manufacturer specifies particular system components, the fall protection equipment shall be specified in this section as appropriate. Examples of specialized equipment may include temporary horizontal lifelines, and ladder climbing systems. **Note: Sellers shall understand the manufacturer's recommendations and limitations of the equipment being specified.** Provide a manufacturer's catalog cut of the equipment being utilized as an attachment to the EWP.

Fall clearance distance calculations shall be prepared (and signed/dated) by either a Qualified Person or a Competent Person for all PFAS. Fall clearance distance calculations shall take into account the following: (1) the normal worker position (i.e., standing, crouched, on hands and knees, etc.) during the work, (2) height of the anchor relative to the worker's D-ring, (3) length of the lanyard or slack, (4) deceleration distance of the lanyard (normally 3-½ ft., unless the manufacturer provides published data stating otherwise), (5) slack in the system (normally 1 ft.), and (6) a safety factor (normally 3 ft.). Fall clearance distance calculations shall also take into account swing hazards and potential obstructions in the fall zone. Fall clearance distance calculations shall be attached to, and referenced in the EWP. Attachment (2) to EXHIBIT 15 (Fall Distance Calculation Worksheet) is provided to aid the Seller in the performance of these calculations and shall be used to the extent feasible.

VI. Anchor Points:

- a. Anchorages shall be clearly indicated from the information provided. If there is uncertainty or ambiguity in identifying the anchorage, a sketch, drawing or photos shall be provided to clarify.
- b. Indicate the number of individuals that can safely use the anchorage.
- c. Engineering calculations shall be prepared (and signed/dated) by a Qualified Person for all anchor points used for PFAS, Positioning Device and Fall Restraint Systems. Anchor points shall meet the minimum strength requirements provided in 29 CFR 1926.502. Engineering calculations shall be peer-checked (and signed/dated) by another engineer. Engineering calculations may also be required for scaffold erection, floor opening covers, etc. Engineering calculations shall be attached to, and referenced in the EWP.
- d. Signature of the Fall Protection Competent or Qualified Person evaluating the anchorage.

VII. Rescue Procedures: Rescue planning is required only when the fall protection system to be used is a PFAS or Positioning Device System. Personnel rescue must occur promptly to prevent the adverse affects of suspension trauma (i.e., constriction of blood vessels and loss of circulation).

The Competent Person (through Buyer's Representative) shall coordinate with Knolls Site Emergency Services & Systems (ESS) or Kesselring Site Incident Prevention (IP), as applicable, during the initial planning stages of the work to ensure prompt rescue can be provided. The EWP shall indicate the specific means by which ESS/IP personnel shall be notified prior to commencing the elevated work. The EWP shall also include any special instructions as to how rescue personnel will execute the rescue in those cases that are not covered by ESS/IP's standard operating procedures. A copy of the approved EWP shall be provided to ESS/IP prior to the start of work to ensure that they are available to provide emergency services at the time of the work.

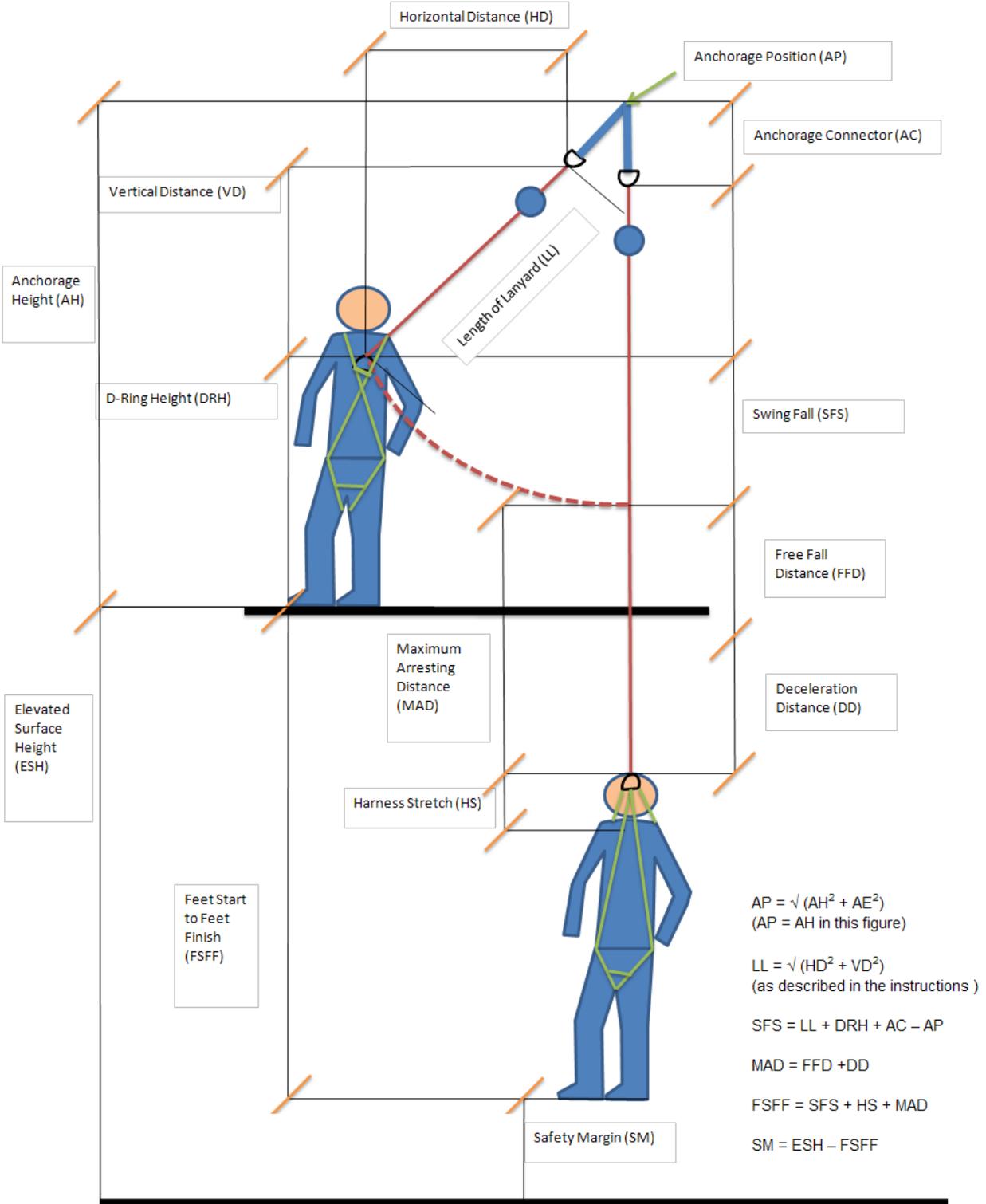
VIII. Approvals: These are the approval signatures for the procedure.

IX. Field Execution Verifications:

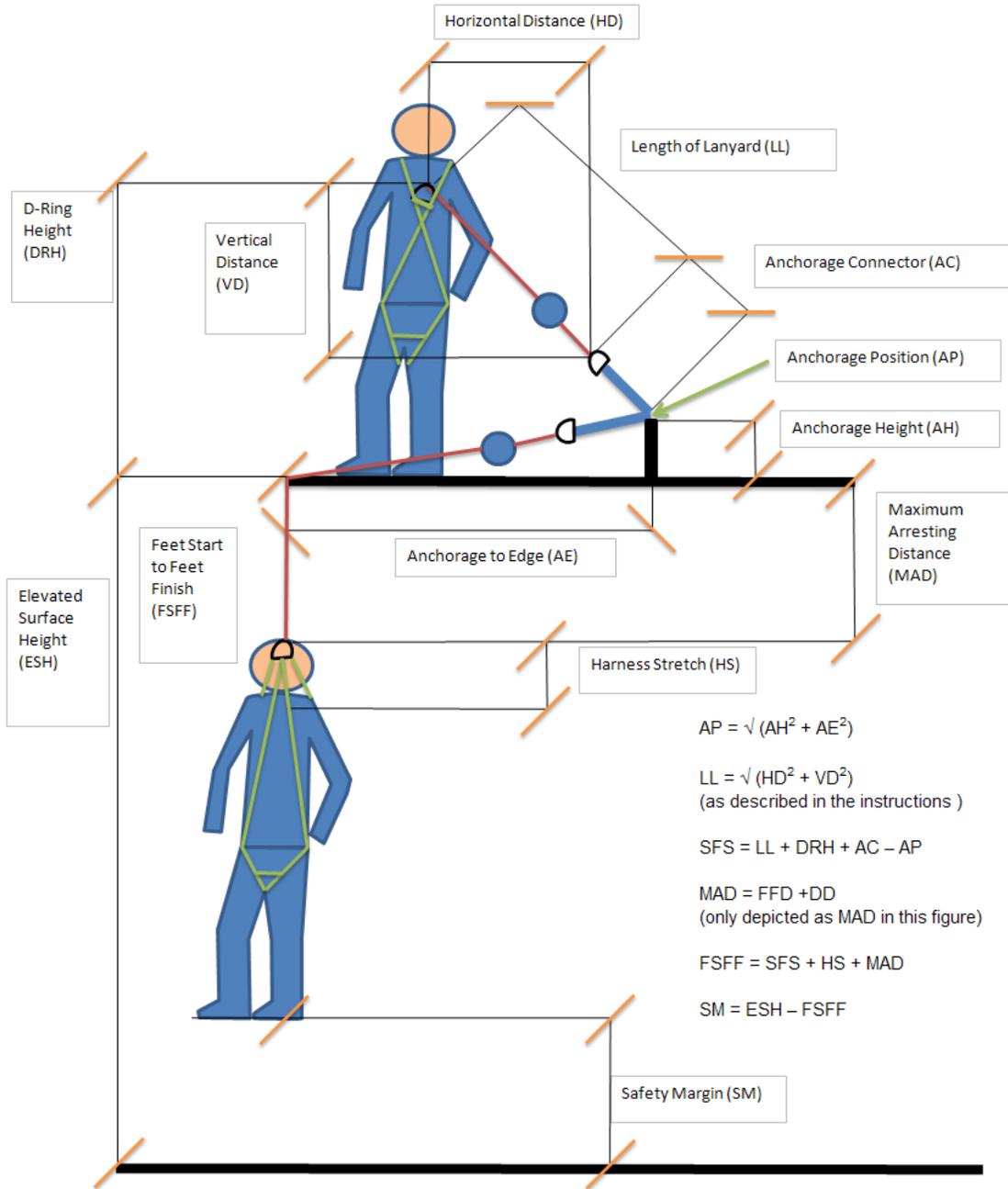
- a. This is to verify that professional rescue services are available if they are to perform the rescue in case of a fallen worker.
- b. EXHIBIT 6B may be used as a substitute to this form in cases of HRW.
- c. The supervisor signature on EXHIBIT 6B may be used as a substitute to this signature in cases of HRW.

Attachment (2) to EXHIBIT 15 Fall Distance Calculation Worksheet

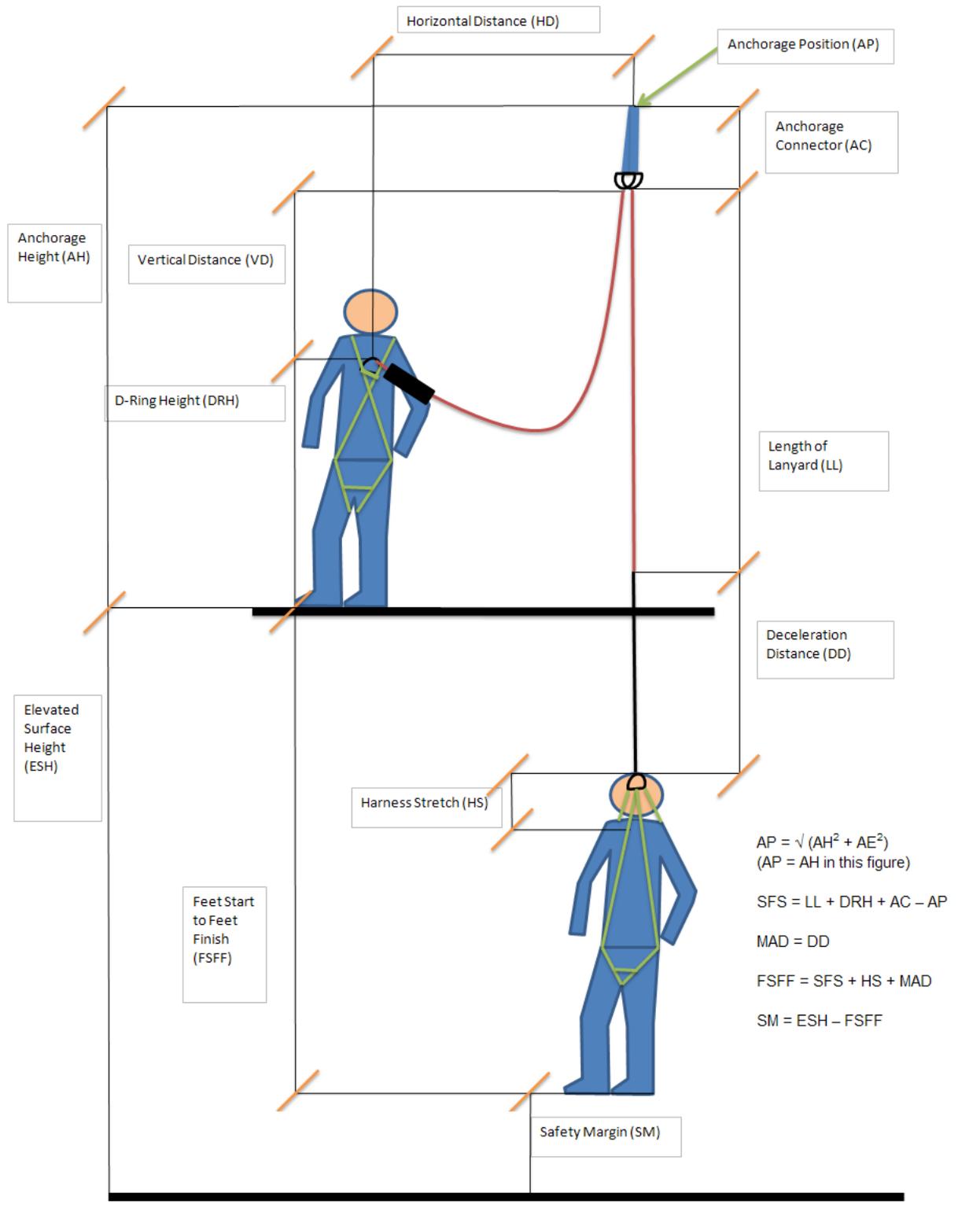
Overhead Self Retracting Lanyard (SRL) Fall Distance Calculation Sheet



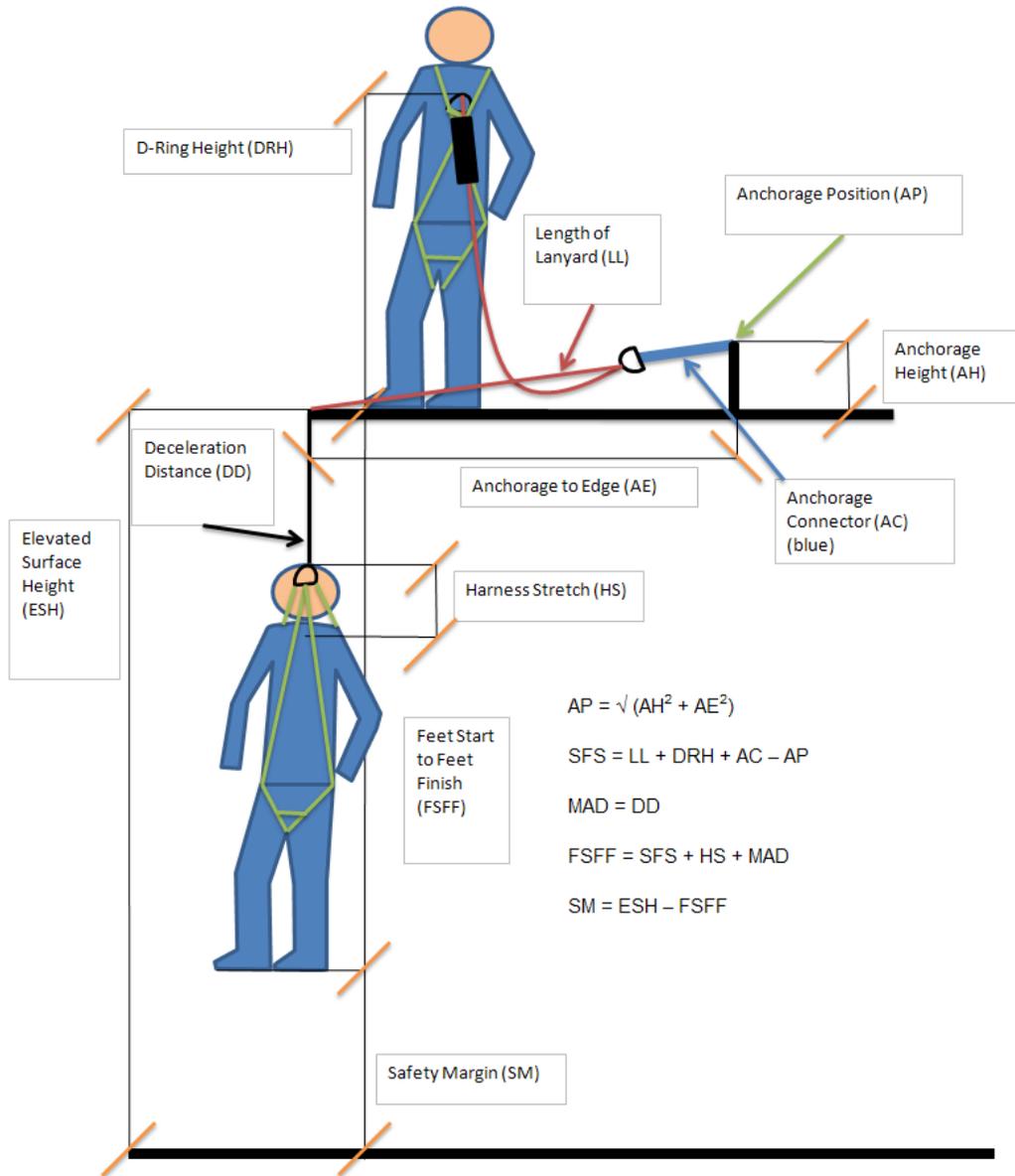
Below D-Ring Self Retracting Lanyard (SRL) Fall Distance Calculation Sheet



Overhead Shock Absorbing Lanyard (SAL) Fall Distance Calculation Sheet



Below D-Ring Shock Absorbing Lanyard (SAL) Fall Distance Calculation Sheet



Fall Distance Calculation Worksheet Instructions

The following equations are to be used when addressing fall distance calculations. It is important to note that the manufacturer's instructions be followed especially in deceleration distances. In cases where the manufacturer states the necessary clearance to the next lower level instead of an additional maximum arrest distance, that value can be used in lieu of the fall distance calculation. These instructions are not required to be included in the work document or submittal for approval.

The instructions here are to provide guidance in performing the fall distance calculation. Not all cases can be represented here. The EWP preparer shall choose the figure that most accurately represents their work evolution and include it in the EWP. In cases where the figure does not fit the EWP, an equivalent representation shall be generated.

The following elements shall be reviewed by the preparer of the EWP to determined applicability for the fall distance calculation to be performed. This is not an all inclusive list. It does not include values associated with unique systems such as horizontal lifelines, potential additional shock protection for heavy users (greater than 310 lbs.) and some temporary roof anchor systems.

Anchorage Position (AP) – The location of the terminating component of a fall protection system or rescue system that is intended to support any forces applied to the system. The AP is measured from the elevated surface. AP can be conservatively estimated by just using the Anchorage Height (AH).

Anchorage to Edge (AE) – The horizontal distance from the closest edge of the elevated work surface to the AP.

Anchorage Height (AH) – The vertical distance from the elevated surface to the AP.

Anchorage Connector (AC) – Distance from the anchorage position that the anchorage connector extends. For a shackle or similar permanent anchorage the EWP preparer may take connection point as the anchorage position. For a cross-arm strap or similar device, the anchorage connector length is the remaining length following the wrap.

Length of Lanyard (LL) – The length of the lanyard to connect the user to the AC.

For SALs: Use the actual length of the lanyard.

For SRLs: Use the Horizontal Distance (HD) and Vertical Distance (VD), as defined below, to calculate the value unless the undeployed length of the SRL is greater than the calculated LL. In such cases use the actual physical length of the SRL.

If the user is in a lower body position as part of the planned work evolution, the calculated Length of Lanyard should be to the user's lower position. Doing so will account for additional fall distance associated with lower body positions when the anchorage is overhead in SRL uses. This compensation for body position is not intended to account for transitory body positions. The final LL for SRLs allows swing fall distances to be calculated below.

Vertical Distance (VD) – Vertical distance from the AC to the user's D-Ring.

Horizontal Distance (HD) – Horizontal distance from the AC to the user’s D-Ring.
D-Ring Height (DRH) - This is the distance the user's D-ring to feet when standing. This is normally five feet.

Swing Fall and Slack (SFS) – This calculated value captures the swing fall and slack that is in the lanyard between the AP and user’s D-Ring.

For SALs: Swing fall and “slack” fall distance is captured by this value.

For SRLs: Swing fall distance is captured by this value when the SRL is taut and anchored overhead since there is no slack in the system. This value also captures the “slack” or additional fall distance in a SRL system when the SRL is not taut or is anchored below the user’s D-Ring.

Harness Stretch (HS) - During Fall Arrest, this factor considers stretch due to the elastic properties of the harness materials and the potential for the harness to move up the user’s back. This is most commonly one foot.

Maximum Arresting Distance (MAD) – MAD represents the total of Free Fall Distance (FFD) and Deceleration Distance (DD).

Free Fall Distance (FFD) – The maximum amount of free fall applicable to the fall arrest system, per manufacturer’s guidelines. SAL free fall is dependent upon the height of the anchorage above the user’s D-ring and is captured by the SFS value. SRLs meeting the requirements of ANSI-ASSE Z359 limit the maximum free fall distance two feet or less.

Deceleration Distance (DD) - The vertical distance a falling user travels while being slowed by the arresting device. In some cases such as when an additional shock pack is required, this distance may be greater for the system than just the SRL or SAL. In all cases manufacturer’s instructions shall be followed.

Feet Start to Feet Finish (FSFF) – This is the vertical distance between the elevated work surface and where the user’s feet would end up after a fall.

Elevated Surface Height (ESH) – This is the vertical height of the work surface above the next lower surface. This is also known as “feet start.”

Safety Margin (SM) – The safety margin is the estimated distance from the next lower level following a fall. If suspended height is less than the safety margin recommended by the manufacturer (typically three feet) justification shall be provided in the EWP. No fall distance calculation is required in cases where the manufacturer of the equipment provides a required clearance distance, but the documentation as provided by the manufacturer shall be included in the EWP. The remaining distance to the next lower level should be considered for rescue planning.

Fall Distance Calculation Equations:

$$AP = \sqrt{AH^2 + AE^2}$$

$$LL = \sqrt{HD^2 + VD^2} \text{ for SRLs as described above, for SALs use actual lanyard length}$$

$$SFS = LL + DRH + AC - AP$$

$$MAD = FFD + DD$$

$$FSFF = SFS + HS + MAD$$

$$SM = ESH - FSFF$$

EXHIBIT 16

Excavation Plan

Name of Sub-Contractor: _____
Title of Project: _____
Location of Project: _____

1. SCOPE OF WORK

Explain the project and include the following:

- *what is the purpose of the excavations,*
- *where specifically the excavations will be located,*
- *drawings for the project (indicate on those drawings the depths of the excavations).*

2. SAFE WORK PRACTICES

Present the methods to be utilized to ensure the safety of personnel in the area. A focus should be on prevention of hazardous cave-ins, fall protection, and head protection. Examples of safety measures include, but are not limited to, the following:

- *use and specifics concerning sloping, shoring, and/or trench boxes (attach profile drawings indicate locations on drawings)*
- *location of spoils piles*
- *PPE to be utilized including hard hats, safety glasses, steel-toed shoes,*
- *types of warning lines, barriers, and/or signs to prevent unauthorized access or falls (daytime and nighttime provisions)*
- *means of egress (i.e. ladders - numbers and locations)*
- *safe storage of materials and chemicals*
- *daily inspections*
- *any specifically prohibited activities*

3. EQUIPMENT AND TOOLS

List any tools and equipment to be brought on-site. Include, for example, backhoes, trench boxes (attach specifications of trench boxes and other safety equipment), generators, hand tools, etc.

4. RESCUE PROCEDURES

Indicate the specific means by which rescue personnel will be notified of emergencies. Prior to the start of work coordination with BMPC Emergency Services is required.

5. DEWATERING PROCEDURES

Indicate the specific procedures to be followed to prevent the accumulation of water in the excavations and the means to dispose of any water, should it accumulate.

6. TRAINING

Indicate relevant training of the workers and the Competent Person. This can include general excavation safety, experiences, and training specific to the project. Also indicate the frequency of safety briefings to the workers.

7. SIGNATURE(S)

_____ is the designated Competent Person for the company (Company Name) performing the excavation activities, _____. The Competent Person is capable of identifying existing and predictable trenching and excavation hazards and is authorized to take immediate corrective actions, if required. The Competent Person will be on-site at all times while work is in progress.

(Signature of Competent Person preparing plan)

EXHIBIT 17

MAJOR EQUIPMENT DECLARATION

The following equipment will be used on Subcontract Number _____

EQUIPMENT	MANUFACTURER	SERIAL NO

(Use Additional Sheets As Necessary)

All equipment listed above was manufactured in accordance with applicable State, Federal, and local requirements, including DOT, ICC, ASME, and ANSI, or the equivalent, and is properly serviced and maintained in accordance with each manufacturer's recommendations and OSHA/ANSI/BMPC requirements as applicable.

All equipment listed above will be operated, inspected, and maintained by a competent person for the duration of the Subcontract. Equipment will not be operated in an unsafe manner or condition. Equipment that cannot be repaired will be removed from the BMPC SITE.

Documentation of all required certifications, inspections, and maintenance will be maintained by the Subcontractor's On Site Safety Representative and shall be available for BMPC review as requested.

Equipment leaking fluids will be immediately removed from service and the fluids will be contained to prevent absorption into surface areas. (SEE S-12 SECTION III C FOR SPILL ACTIONS)

Signature of Subcontractor representative Date Company Name

Submit one (1) copy to the cognizant Contract Administrator and one (1) copy to the Buyer's Representative (SCWA/STR) before placing equipment in service at any of the BMPC Sites.

MAJOR EQUIPMENT LIST*

- | | | | | |
|---------------------------------------|--|----------|------------------------------------|---------------|
| Cranes (All Types) | Front End Loaders | Dozers | Scrapers | Light Plants |
| Finishing Machines | Compactors/Rollers | Backhoes | Forklifts | Power Shovels |
| Generators, Portable | Spreading Machines | Graders | Grade-alls | Compressors |
| Aerial/Man Lifts | Saws (Cut Off-Band-Table-Stone) | | Trenching Machines (Ditch Witches) | |
| Wackers (Soil Compactors) | Tractors (Agricultural and Industrial) | | Trucks and Trailers (All Types) | |
| Welding Machines (Gasoline or Diesel) | | | | |

* Vehicles permitted under Part 364 "Waste Transporter Permit" are exempt from this list.

THIS LIST IS NOT ALL-INCLUSIVE. CONTACT THE BUYER'S REPRESENTATIVE CONCERNING ANY MAJOR EQUIPMENT THAT MAY NOT BE LISTED!

EXHIBIT 18

HAZARD ANALYSIS PLAN

The following is a hazard analysis plan summary for the following project:

(insert project name, number here)

This plan was prepared for *(insert company or group name here)* Date: *(insert date here)*

By: *(print person's name here)*

Signature: _____

Work Evolution	Hazard	Engineering Controls	Administrative Controls	PPE
Aerial Lifts, Use of	Contact with Overhead Lines	An insulated lift shall be used for all electrical work. S/C must demonstrate that the lift meets ANSI A92.2 requirements.	Maintain a minimum distance of 10' from all overhead electrical lines, or de-energize and LOTO, or insulate the lines using a certified line hose/boot prior to work.	Hard Hat
Aerial Lifts, Use of	Fall from Lift	Use manufacturer's designated tie-off points.	Maintain both feet planted on the floor of the bucket. Do not climb or lean over guardrail. Do not climb out of bucket while in an elevated position.	Full body harness and lanyard (as recommended by the manufacturer)
Aerial Lifts, Use of	Falling Objects	Use toe-board (and potentially a plastic mesh fence) on lift basket to prevent loss of tools overboard. Lanyard tools/equipment to prevent loss overboard.	Boundary off area below lift and post as "Hard Hat Required".	Hard Hat
Aerial Lifts, Use of	Stranded in Elevated Position / Operator Incapacitated	Aerial lift maintained in accordance with manufacturer's recommendations.	Inspect aerial lift prior to use. Designate a ground man. Both operator and ground man are qualified to operate the lift. (A rescue plan not normally required.)	Hard Hat
Electrical Work (General)	Electrical Shock	Components >50 V (or >30 volts for Plant-controlled systems) shall be appropriately guarded and labeled to prevent accidental contact with energized parts.	Only electrically qualified personnel (OSHA 1910.332) shall perform electrical work. Perform work to the extent practicable while de-energized and LOTO. Personnel are trained to LOTO requirements (OSHA 1910.147).	Safety glasses with side shields, insulated gloves and tools (as necessary).

EXHIBIT 19

KSO PROTOTYPE PLANT AND OSHA TAGOUT SYSTEMS EQUIVALENCY

Tagout Record Sheet Number (Line Item): _____

Project Title / Work Description: _____

Subcontractor's Name & Address _____

In accordance with OSHA 29 CFR 1910.147 (c) (3) (i), *"When a tagout device is used on an energy isolating device which is capable of being locked out, the tagout device shall be attached at the same location that the lockout device would have been attached, and the employer shall demonstrate that the tagout program will provide a level of safety **equivalent** to that obtained by using a lockout program."* (Emphasis added).

I have familiarized myself with the energy control requirements for this job and I understand that BMPC uses recognized equivalent controls. These controls for KSO Prototype Plant controlled systems are set forth in the Naval Sea Systems Command's *Tagout User's Manual*. I accept that the energy control procedure for this job is equivalent, in all ways, to the OSHA Lockout/Tagout energy control procedures outlined in OSHA 29 CFR 1910.147 and contained in my Corporate Safety Plan.

Signed: _____
On Site Safety Representative Date

I fully understand that the tagout record sheet being issued in support of this work is both accurate and adequate to protect my affected employees and lower tier subcontractors. Furthermore, all of my affected employees and lower tier subcontractors have been briefed on this equivalent tagout process, as well as the energy control specifics associated with the above tagout record sheet number.

The BMPC Buyer's Representative is authorized to hang the tagout.

Signed: _____
On Site Safety Representative Date

All of my subcontractor-associated work affected by the above tagout record sheet number is complete. All affected employees have been notified that the tagout is no longer in effect.

The BMPC Buyer's Representative is authorized to removal / clear the tagout.

Signed: _____
On Site Safety Representative Date

Exhibit 20

HOT WORK (Burning/Welding) PERMIT – Part 1

Location of Work: _____ Date(s): _____
(Be as specific as possible)

Nature of Work: _____

Burn Weld Open Flame Soldering Other _____

The Permit Requestor or Subcontractor Technical Representative (STR) shall Obtain Fire Protection Approval for the Hot Work and complete the front half of this Hot Work Permit.
(Check item when completed.)

1. Fire Protection Representative approval: _____ / _____
(Fire Protection Rep.) (Date)

Comments: (Fire Protection Rep.) _____

2. Ensure that the sprinkler system is in service (if protected by a system). If not, contact the Fire Protection Representative immediately. Check if Hot Work is being performed outside.

3. Do not allow hot work to be conducted near fire protection equipment (sprinklers, etc), flammable liquids, or on closed tanks, which have held flammable liquids or held other combustible materials.

4. Ensure that the work area is prepared for hot work:

- a. Floors have been swept clean.
- b. All combustible material has been relocated (35 feet) or covered with welding blankets, sheet metal, or other non-combustible material if it cannot be moved.
- c. Verify Fire detection systems in the area (if protected by a system) have been deactivated per the Fire Protection Representative.
- d. There is adequate access to heat exposed surface, combustibles are not located on the opposite side of partitions, walls, ceilings or floors.

5. Ensure that the duct systems (HVAC systems) have been turned off and combustible inside deposits have been removed when working on these types of systems. Check if hot work does not involve duct systems (HVAC systems)

6. If any extraordinary conditions exist, such as hot work that will be conducted on or near explosives, pyrophoric materials, flammable liquids, or flammable gases, STOP immediately and contact the Fire Protection organization and Safety.

7. Ensure that all openings in walls and floors where hot material might enter will be covered with noncombustible material by the operator.

8. Ensure that Fire Watch (es) are stationed in the hot work area with the appropriate fire extinguisher for the class of fire likely to be encountered. The fire extinguisher shall be readily accessible and within 30 feet of the location where hot work is performed.

9. Ensure that the Fire Watch understands his/her duties, including protection of the operator(s) and the surrounding area, and in the use of the assigned fire extinguisher.

10. Ensure that the area will be adequately ventilated.

11. Ensure that the operator has been trained on the required Personal Protective Equipment (PPE) and ensure that it will be worn during the hot work operations.

12. Will the work be conducted inside or next to a radiological area (Radioactive Materials Area (RMA), Radiologically Controlled Area (RCA), or Controlled Surface Contamination Area (CSCA)?

YES NO

NOTE: If the hot work is outside of the radiological area and a physical barrier (e.g., a solid wall) is located between the radiological area and the hot work area and no hot work will be performed on the wall or items connected to the wall, then check the "NO" block. If Yes, STOP and obtain authorization from the Manager, RC&E Radiological Engineering or his designated representative.

RC - Radiological Engineering approval: _____

Hot Work Permit Pre-work Check reports (Part 1 & Part 2) shall be maintained on the job site for a minimum of 48 hours after work is complete. Part 1 shall then be forwarded to the Fire Protection Representative.

Exhibit 20 (continued)

HOT WORK (Burning/Welding) PERMIT – Part 2 (Daily-Update/Inspection)

Operator Responsibilities Prior to the Start of "Hot Work": (Check item when completed or understood.)

- 1. Ensure that the welding/burning equipment is in good repair and in a safe operating condition.
- 2. Ensure that the pressurized flammable liquid or gas lines within 5 feet of the work have been leak tested with soapy water.
- 3. Ensure that the area has been properly secured (roped off, welding screens as necessary, etc).
- 4. Ensure that the Fire Watch has been instructed to remain at the job site to watch for smoldering fires for at least 30 minutes after the completion of the job.
- 5. Cover all openings or holes in walls and floors where hot material might enter.
- 6. Verify that you (the operator) have been properly trained on the proper use of the required PPE and that the PPE will be worn during the hot work operations.
- 7. Obtain concurrence from the Permit Requestor or STR before using portable burning or welding equipment anywhere in the Laboratory except in areas designated as permanent safeguarded (weld/burn areas) locations.
- 8. Understand that work shall be stopped immediately if unsafe conditions develop and notification of the Permit Authorizing Individual (PAI) is required to gain help in reassessing the situation.

Operator Name/Signature: _____ / _____ Badge No.: _____ Dept./Company: _____

Fire Watch Responsibilities prior to the Start of "Hot Work": (Check item when completed or understood.)

- 1. Ensure that safe conditions will be maintained during hot work operations.
- 2. Immediately stop the hot work operation if unsafe conditions develop.
- 3. Have fire extinguishing equipment readily available, be trained in its proper use, and know the location of the nearest fire alarm manual pull box and the site's emergency number.
- 4. If a fire occurs, immediately activate the fire alarm manual pull box and attempt to extinguish the fire only if it is judged to be within the capabilities of the available extinguishing equipment.
- 5. In addition to watching for fires, the Fire Watch shall be responsible for the overall safety of the operator(s) who is performing the hot work.

Fire Watch Name/Signature : _____ / _____ Badge No.: _____ Dept./Company: _____

The Permit Requestor or STR who is authorizing the hot work to proceed has completed the checklist (see the front side of this permit) and has reviewed the job site following final preparations by the Operator and the Fire Watch.

Permit Requestor or STR _____ Badge No.:

Operator's Signature and Time at the Completion of the "Hot Work":

Operator's Signature: _____ Date: _____

Time When Hot Work was Completed: _____

Fire Watch's Responsibility at the Completion of the "Hot Work":

- 1. The work area and all adjacent areas have been were inspected for a minimum of 30 minutes after hot work has ceased and found to be in a safe condition.

Fire watch Signature: _____ Date: _____

Time Fire Watch Was Completed: _____

- 2. After signing, return the permit to the Permit Requestor or STR

Hot Work Permit Pre-work Check reports (Part 1 & Part 2) shall be maintained on the job site for a minimum of 48 hours after work is complete. Part 1 shall then be forwarded to the Fire Protection Repre

EXHIBIT 21

Respirator Permit

<u>Permit No.</u>	<u>Expiration Date</u>
<input type="text"/>	<input type="text"/>

	Name:	Name:	Name:	Name:
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
General Information	Medical Expiration Date:	Medical Expiration Date:	Medical Expiration Date:	Medical Expiration Date:
	Training Expiration Date:	Training Expiration Date:	Training Expiration Date:	Training Expiration Date:
	Fit Test Expiration Date:	Fit Test Expiration Date:	Fit Test Expiration Date:	Fit Test Expiration Date:
Equipment	Respirator Manufacturer:	Respirator Manufacturer:	Respirator Manufacturer:	Respirator Manufacturer:
	Respirator Type:	Respirator Type:	Respirator Type:	Respirator Type:
	Respirator Model:	Respirator Model:	Respirator Model:	Respirator Model:
	Facepiece Size:	Facepiece Size:	Facepiece Size:	Facepiece Size:
	Cartridges/Filters:	Cartridges/Filters:	Cartridges/Filters:	Cartridges/Filters:
	[P100 or HEPA are required for particulate]	[P100 or HEPA are required for particulate]	[P100 or HEPA are required for particulate]	[P100 or HEPA are required for particulate]
Work Site	Job Location:			
	Job Description and Applicable Use Restrictions:			
Signature: _____ Date: _____ Industrial Hygiene or Safety Representative				

EXHIBIT 22A

FORM 2.2 CONFINED SPACE ENTRY PERMIT

Naval Nuclear Propulsion Program	Current Entry Supervisor:	Permit #	
Bldg. or Area in Which Space is Located:	Specify Space/Compartment To Be entered:	Date/Time Permit Issued:	
	Status of Space: Full <input type="checkbox"/> Empty <input type="checkbox"/> New <input type="checkbox"/> Other <input type="checkbox"/> (Specify)	Permit Invalid After: Date/Time	
<p>Nature of fuel oil, chemicals or coatings present in or last contained in the space to be monitored. If foreign materials of unknown or uncertain makeup are present, indicate this fact:</p> <p>Identified Confined Space Hazards (be specific): Condition of pipelines to space with possible contents of steam, gases, or liquids. Systems associated with space to be inspected:</p> <p>Condition of spaces and areas adjacent to space in question and means to eliminate or control hazards:</p> <p>Acceptable Entry Conditions: (additional controls not addressed in check box to the right)</p> <p>Purpose of entry/specific tasks to be performed:</p>	Entry Equipment/Considerations	Yes	No
	Attendant	<input type="checkbox"/>	<input type="checkbox"/>
	Life lines/Harness	<input type="checkbox"/>	<input type="checkbox"/>
	Protective Clothing	<input type="checkbox"/>	<input type="checkbox"/>
	Emergency Resp. Plan (ATTACHED)	<input type="checkbox"/>	<input type="checkbox"/>
	Continuous Air Monitoring	<input type="checkbox"/>	<input type="checkbox"/>
	Ventilation	<input type="checkbox"/>	<input type="checkbox"/>
	Respirator	<input type="checkbox"/>	<input type="checkbox"/>
	Permit (Hot Work)	<input type="checkbox"/>	<input type="checkbox"/>
	Fire Extinguisher	<input type="checkbox"/>	<input type="checkbox"/>
	Non-Sparking Tools	<input type="checkbox"/>	<input type="checkbox"/>
	Barricade/Guarded	<input type="checkbox"/>	<input type="checkbox"/>
	Lockout/Tagout	<input type="checkbox"/>	<input type="checkbox"/>
	Flushing/Inerting	<input type="checkbox"/>	<input type="checkbox"/>
	GFCI	<input type="checkbox"/>	<input type="checkbox"/>
	Lights	<input type="checkbox"/>	<input type="checkbox"/>
	Means of Communication:		
Voice <input type="checkbox"/>	Visual <input type="checkbox"/>		
Radio <input type="checkbox"/>	Other <input type="checkbox"/> (Specify)		
Additional information and comments to ensure employee safety. Additional permits or procedures that are needed to authorize work in the space.			

EXHIBIT 22A

CONFINED SPACE ENTRY PERMIT (Continued)

Permit # _____

Signature: _____ Date: _____

Confined Space Entry Supervisor

(Personnel listed below have been briefed on all elements of the permit and are authorized to enter this space. All Authorized Entrants and Attendants have received training specific to this entry.)

Attendant Name	Employee #	Time assumed duty/Time relieved		Briefed by:	Employee #

Entrant Name	Employee #	Time in/out		Briefed by:	Employee #

EXHIBIT 22B

NON PERMIT CONFINED SPACE ENTRY FORM

LOCATION: _____

TASK(S) AUTHORIZED DURING THIS ENTRY _____

THIS SPACE WAS INITIALLY CLASSIFIED AS PERMIT-REQUIRED BUT IS BEING RE-CLASSIFIED AS NON-PERMIT FOR THIS ENTRY IN ACCORDANCE WITH THE INITIAL EVALUATION FORM. (Independent approval signature by the Safety Organization or Area Tenant is required.)

THIS SPACE CLASSIFIED AS NON PERMIT IN ACCORDANCE WITH THE APPLICABLE "INITIAL CONFINED SPACE EVALUATION" AND CURRENT WORK INTRODUCES NO NEW HAZARD, OR HAZARDS HAVE BEEN ELIMINATED BY: _____

PRE-ENTRY ATMOSPHERIC MONITORING

Signature: _____ Date: _____

Person performing the monitoring
_____ % Oxygen (Must be between 19.5 and 23.5%)
_____ % LEL (Must be < 10%)

Toxic gas or vapor (if applicable) (Exposure limit for CO is 25 PPM. For H₂S it is 10 PPM.)
_____ PPM _____ Exposure limit _____
Name of toxic gas or vapor
_____ PPM _____ Exposure limit _____
Name of toxic gas or vapor

MECHANICAL VENTILATION: Required Not Required

OPENING PROTECTED AGAINST FALLING IN? Yes Not Applicable

ADDITIONAL ENTRY REQUIREMENTS:

NOTE: THIS SPACE MUST BE RE-EVALUATED IF CONDITIONS CHANGE (E.G., WELDING, SOLVENTS, GLUING, ETC.) Personnel listed on back have been briefed and are authorized to enter this space and perform the task(s) listed above.

ENTRY BRIEF CONDUCTED BY: _____

ENTRY APPROVAL EXPIRES _____
Date Time

CS Entry Supervisor Signature: _____ Date: _____

Safety Organization: _____ Date: _____
(Required signature if space is reclassified from a permit-required to non-permit confined space)

EXHIBIT 22C: CONFINED SPACE EVALUATION

Code of Reference: 29 CFR 1910.146

Confined Space Name & Location: Building/Room/Area/Tank:	Evaluated By: Date of Evaluation:
Space Description: Physical Characteristics/Configuration/Dimensions	CLASSIFICATION/TYPE OF SPACE: Permit Required Confined Space _____ Non-Permit Required Confined Space _____ Not a Confined Space _____

CLASSIFICATION/TYPE OF SPACE ANALYSES

Criteria	Yes	No	Criteria	Yes	No
A. Is the space large enough to enter and perform work?			G. Does the space have an internal configuration that could trap, asphyxiate, have inwardly converging walls, or taper down to a smaller cross-section?		
B. Does the space have limited/restricted means for entry?			H. Does the space contain any other recognized serious safety or health hazard?		
C. Is the space not designed for continuous occupancy?			I. Does the space contain or have the potential to contain any hazards capable of causing death or serious physical harm?		
D. Are all three of the above answers "Yes"? (If all three yes, the space is classified as a Confined Space. If any of three are "No", check "Not a Confined Space").			J. Are all answers "No" to questions E. through I.?		
E. Does the space contain or have the potential to contain a hazardous atmosphere?			K. If answers to D. and J. are both "Yes", then check "Non-Permit Confined Space".		
F. Does the space contain a material with a potential for engulfment?			L. If answer to D. is "Yes" and J. is "No", check "Permit Required Confined Space".		
			M. If an answer is "Yes" to question E. through I. then provide additional information below for identified hazards.		

IDENTIFIED HAZARDS

No.	Area/Location	Hazard Comments
1.		
2.		

EXHIBIT 22C: CONFINED SPACE EVALUATION (Continued)

Additional space descriptions: SKETCH OF CONFINED SPACE

INITIAL EVALUATION APPROVAL SIGNATURES		Date
Area Tenant cognizant of the evaluated space		
Other if applicable		
Safety Organization		

RECLASSIFICATION OF PERMIT-REQUIRED CONFINED SPACES

per 29 CFR 1910.146(c)(7)

Permit-required confined space may be reclassified as a non-permit confined space under the following procedures:

- 1) The permit space poses no actual or potential atmospheric hazards and
- 2) All hazards within the space are eliminated without entry into the space and remain eliminated for the duration of the entry.

For the space listed on this Initial Evaluation, completion of the following actions eliminates the hazards from this space and allows it to be reclassified as a non-permit entry.

- Energy sources (e.g. electrical, mechanical, hydraulic, pneumatic, gravity) are blocked out or locked/tagged out. (This is not required when the energy source merely passes through the confined space and the intended work has no likelihood of contacting or disturbing the energy source.)
- Liquid, steam, or gas supply line(s) are isolated by blank flange, cap, plug, or double valve isolation and bleed-off.
- The following alternate or additional actions are required to eliminate the hazards from this space:

Safety Organization Reclassification Review Performed By:	Name (print)	Signature	Date
---	--------------	-----------	------

Exhibit 23

Form C11-1 — SITE EXCAVATION PERMIT

PERMIT NUMBER:		EXPECTED START DATE:
PROJECT NAME:		PROJECT NUMBER:
NAME OF REQUESTOR:		PERMIT EXPIRATION DATE:
RESPONSIBLE WORKGROUP:		PERMIT EXTENSION DATE:
REFERENCE DOCUMENT NO.	REV. NO.	REMARKS
LOCATION AND DESCRIPTION OF EXCAVATION REQUESTED:		
PRECAUTIONS/HOLD POINTS:		
<i>Notify STR - Name _____ Phone nos. _____ if excavation problems are encountered</i>		
PERMIT ACTIVATED BY (Excavation permit process owner):		ACTIVATION DATE:

PERMIT REQUESTOR COMPLETE THE FOLLOWING ITEMS PRIOR TO START OF EXCAVATION	NAME/SIGNATURE	DATE
Establish Criteria for Excavation Permit		
Create Excavation Permit Sketch (attached)		
Mark Excavation Area		
Mark Utilities		
Lockout Utilities		
Safety and Environmental Requirements (attached if required)		

Exhibit 23

Form C11-1 — SITE EXCAVATION PERMIT (Con't)

PRE-EXCAVATION DISCIPLINE REVIEW:	NAME/SIGNATURE	DATE
SYSTEM ENGINEER (Note 1)		
SYSTEM ENGINEER (Note 1)		
SYSTEM ENGINEER (Note 1)		
SAFETY ORGANIZATION (Note 1)		
ENVIRONMENTAL ENGINEERING		
RADIOLOGICAL ENGINEERING		
PERMIT REQUESTOR (Note 3)		
CP (approval to proceed) (Note 1)		
STR (approval to proceed) (Note 2)		
POST-EXCAVATION SIGN-OFFS:		
EXCAVATION COMPLETE (STR or WGS)		

DOCUMENT UTILITIES, MATERIALS, OR COMPONENTS ENCOUNTERED DURING EXCAVATION: Also, indicate if none were found.

PERMIT CLOSED BY (Excavation permit process owner):

DATE:

NOTES:

- (1) Signature Required for all Work
- (2) Signature Required for Subcontracted Work
- (3) Discrepancies between the field survey and sketch have been resolved; excavation can commence.

EXHIBIT 24
BMPC PENETRATION PERMIT

Permit # _____

- START DATE (BR): _____ END DATE (BR): _____
 - LOCATION of PENETRATION(BR): _____
 - REASON for PENETRATION (BR): _____
 - BUYER'S REPRESENTATIVE (BR): _____
 - PERFORMING GROUP or SUBCONTRACTOR _____
 - DIMENSION/DESCRIPTION(BR): Depth: _____ Diameter /Length: _____ Width: _____
 - EQUIPMENT TO BE USED): _____
 - DRAWINGS REVIEWED (List – Use a continuation sheet if needed) _____
-
- LOCATION of PENETRATION MARKED? (BR) _____
 - METHOD of MARKING? (BR) _____
 - ARE EXISTING UTILITIES OR CONCEALED SERVICES IDENTIFIED IN FLOORS, CEILINGS, OR WALLS? (BR) YES _____ NO _____; IF YES, DESCRIBE: _____
 - TYPE of DETECTION EQUIPMENT USED: (BR) (see note 7) _____
 - ARE ANY PERSONNEL, FACILITY, or ENVIRONMENTAL HAZARDS INVOLVED? (BR) YES _____ NO _____
If YES, Describe: _____
 - ARE SYSTEM TAGOUTS and/or SHUTDOWN REQUIRED? (BR) YES ___NO _____
If YES, Describe: _____
 - ARE OTHER PERMITS REQ'D. IN CONJUNCTION WITH THIS WORK? (BR)
Asbestos Work Permit _____ TWD/RWP _____ Hot Work _____
Confined Space Entry Permit _____ Beryllium Work Permit _____
 - BASIS for ENGINEERING VERIFICATION? (ISE/SSE Inspection of Location: ___Drawing Review _____
OTHER (Explain): _____
 - PHYSICAL CHECK & VERIFICATION: (BR-Must be conducted by performer)
Concrete / Concrete Block Wall (see note 7): _____ Gypsum Wallboard _____ Sheet Metal/Prefab _____
Cemestos Board _____ Other (Specify) _____
- METHOD TO BE USED: (BR) _____

Requirements:

1. All hand tools shall be electrically insulated.
2. A copy of the Penetration Permit shall be available at the site of the penetration.
3. The use of internal combustion engine powered equipment indoors or in area of limited ventilation is prohibited without written approval from KAPL Industrial Hygiene.
4. If unknown items are discovered, or the work cannot be performed as planned, all work must stop and the BR must be notified.
5. Any changes to the Penetration Permit must be authorized by signature.
6. Any discrepancies must be noted on drawings.
7. Use of detection equipment to locate potential hidden utilities / obstructions is required for penetrations into concrete or other similar material that could contain hidden utilities.

Signatures

Date

Facility Owner _____

Reviewing Engineer (ISE/SSE) _____

Buyer's Representative (STR/SCWA/PGS) _____

Rad Engineering _____

Environmental Remediation (Knolls)/
Environmental Engineering (KSO) _____

Industrial Hygiene _____

Safety _____

EXHIBIT 25 Asbestos Work Permit

Work Req. No. <input style="width: 80%;" type="text"/>	Permit Number <input style="width: 80%;" type="text"/>	Location <input style="width: 80%;" type="text"/>	Date(s) <input style="width: 80%;" type="text"/>			
		(Bldg/Room)				
Work Description						
<input style="width: 100%; height: 100%;" type="text"/>						
Person(s) Doing Work						
	Name (Last, First, MI)	Badge No.	Name (Last, First, MI)	Badge No.		
1.	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	5	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	
2.	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	6	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	
3.	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>		<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	
4.	<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>		<input style="width: 100%;" type="text"/>	<input style="width: 30%;" type="text"/>	
Specific Requirements						
Protective Clothing:			Equipment:			
<input type="checkbox"/> Coveralls, 1 pr			<input type="checkbox"/> Vacuum			
<input type="checkbox"/> Coveralls, 2 pr			<input type="checkbox"/> Water Spray			
<input type="checkbox"/> Gloves			<input type="checkbox"/> Filtered Exhaust			
<input type="checkbox"/> Hood			<input type="checkbox"/> Special Tools (see below)			
<input type="checkbox"/> Shoe Covers						
<input type="checkbox"/> Other (specify)						
Respiratory Protection:			Special Instructions:			
<input type="checkbox"/> Negative Pressure, Full Face			<input type="checkbox"/> Rope off area, hang signs			
<input type="checkbox"/> Powered, Full Face			<input type="checkbox"/> Contact IH before starting			
<input type="checkbox"/> Supplied Air (see below)			<input type="checkbox"/> Containment certification required			
			<input type="checkbox"/> Other (see below)			
Containment:			Air Samples Required:			
<input type="checkbox"/> Glove Bag			<input type="checkbox"/> Pre-work			<input type="checkbox"/> Boundary
<input type="checkbox"/> Mini- Enclosure			<input type="checkbox"/> Personal			<input type="checkbox"/> Termination
<input type="checkbox"/> Other (see below)			<input type="checkbox"/> Work Area			<input type="checkbox"/> Clearance
Additional Instructions/Information			Containment Approval			
			Date		Signature	
			_____		_____	
			Termination Air Sample Approved:			

			Industrial Hygiene			
Approvals to Start Work:			Permit Terminated:			
Supervisor: _____			Supervisor: _____			
Industrial Hygiene _____						
Area Tenant _____			Date: _____ Time: _____			

EXHIBIT 26

BMPC Specific Requirements

Beryllium restricted-access areas have been established in specific locations and any work required to be performed in those locations is described in the Buyer's technical specification. All work at the Buyer's site involving potential generation of airborne beryllium particles shall be performed in accordance with requirements of the Buyer's Chronic Beryllium Disease Prevention Program.

Work in beryllium restricted-access areas shall be performed under a beryllium work permit (BWP) obtained from the Buyer.

If access to a beryllium restricted-access area can be confined to one or several specific locations, then the Buyer may clean and survey those locations, or otherwise evaluate the locations, to determine that they do not present a potential for exposure to airborne beryllium. The Seller shall be informed of the access limitations and work shall be under the direct supervision of the Buyer.

If the Seller is required to work in a beryllium restricted-access area in locations that have not been cleaned and/or evaluated by the Buyer to determine that there is no potential for exposure to airborne beryllium, then this condition will be identified in the technical specification. The work shall be performed in accordance with an exposure control procedure to be developed by the Seller and submitted to the Buyer for approval at least ten (10) days prior to performance of the work. The procedure shall delineate all actions the Seller shall take to control access to the beryllium restricted-access area; engineered and administrative exposure controls to be used; personal protective equipment to be employed; air sampling and surface contamination sampling schedules, sampling locations, sampling methods, and analytical methods; and any other actions required by the Seller to achieve compliance with the Buyer's Chronic Beryllium Disease Prevention Program. In the exposure control procedure, the Seller shall identify a designated qualified individual (e.g., a Certified Industrial Hygienist) to develop and direct the Seller's beryllium exposure control and sampling program.

Exhibit 26

Bechtel Marine Propulsion Corporation

Beryllium Work Permit

Work Request No.:	Permit Number:	Location:	Date(s):
			Expiration Date:
Work Description:			
Person(s) Doing Work			
Name (Last, First, MI)	Badge No.	Name (Last, First, MI)	Badge No.
Name (Last, First, MI)	Badge No.	Name (Last, First, MI)	Badge No.
Name (Last, First, MI)	Badge No.	Name (Last, First, MI)	Badge No.
1)		4)	7)
2)		5)	8)
3)		6)	9)
Required Personal Protective Equipment			
<input type="checkbox"/> Tyvek Coveralls	<input type="checkbox"/> Negative Pressure, Half face	<input type="checkbox"/> Safety Glasses	
<input type="checkbox"/> Cloth Coveralls	<input type="checkbox"/> Negative Pressure, Full face	<input type="checkbox"/> Goggles	
<input type="checkbox"/> Radiological Anti-c's	<input type="checkbox"/> PAPR	<input type="checkbox"/> Face Shield	
<input type="checkbox"/> Latex Gloves	<input type="checkbox"/> Supplied Air	<input type="checkbox"/> Other (Specify)	
<input type="checkbox"/> Shoe Covers	<input type="checkbox"/> SCBA		
<input type="checkbox"/> Bin Leather	<input type="checkbox"/> Other (Specify)		
Required Air Samples			
<input type="checkbox"/> Personal, all workers	<input type="checkbox"/> Work Area		
<input type="checkbox"/> Personal, selected workers	<input type="checkbox"/> Boundary		
	<input type="checkbox"/> Other (Specify)		
Required Engineering and Administrative Controls			
Additional Instructions/Information			
Approvals to Start Work			
Supervisor: _____	Industrial Hygiene: _____		
Supervisor Signature: _____	Area Tenant: _____		

EXHIBIT 27

PROCEDURE TEMPLATE

This exhibit provides a template for use in preparing a written work procedure. The procedure shall be submitted on the Seller's letterhead and shall contain, as a minimum, the following elements:

"Title of Work Procedure"

Background: This section shall provide the title of the project and it shall explain why the procedure is required.

Work Scope: This section shall provide work elements, sequence of work, and the scope of work covered by this procedure.

Hazard Assessment and Mitigation Strategy: This section shall cover the results of the work assessment for the existing and potential hazards inherent in the work. For each hazard a mitigation strategy shall be performed using the following hierarchy:

- 1) Eliminate the hazard where feasible and appropriate.
- 2) Utilize engineering controls where feasible and appropriate.
- 3) Apply administrative controls that limit the workers exposure.
- 4) Use Personnel Protective Equipment (PPE)

All hazards identified and the mitigating actions shall be specified in the formal work procedure.

Unique Worker Knowledge and Skill Requirement (e.g., qualification, certification) necessary to perform the work shall be specified:

Rescue or Medical Notification Process: This section shall specify the means to rescue an individual in case of emergency or the means to notify emergency or medical responders in case of emergency shall be included when different than an existing protocol and training.

Prerequisites: This section shall indicate any related documents or actions which must be in place prior to execution of the work covered by the procedure. For example, training, permits, approved Exhibit 5's and MSDS's, preparatory actions such as installation of temporary barriers or confirmation of air flows, notifications of personnel, posting of areas as required.

Monitoring and/or Sampling Schedule: If applicable, for application of products such as epoxy paints.

Personal Protective Equipment: If applicable.

Equipment: If applicable.

Stop Work Conditions: This section shall contain the predetermined conditions that warrant stopping work to reassess the adequacy of the controls and the work procedure.

Work Procedure: The level of detail required will be dependent upon the work evolution and potential risk to the workers, adjacent personnel, and to the environment. The procedure should include information such as if the sequence of activities is important, if there are any hold points, and any stop work limits in addition to the work steps.

Supporting Information/Engineering Calculations: When required to verify component/system structural strength requirements. All relevant supporting documentation issued by the Seller Engineer shall be incorporated with the formal work procedure. For existing component/system structures the Buyer is responsible to provide the engineering, unless turned over to the Seller. Calculations and/or any supporting information the Seller deems applicable shall be included.

Drawings/Sketches: Include any diagrams which the Seller deems necessary to clarify the procedure.

Test Results: Include forms or tables required to record data during the procedure.

Permit/Plan: For high risk work evolutions that require issuance of an approved work permit/plan, the approved permit/plan shall be included in the formal work procedure and verified complete by a certification signature (e.g., energized electrical work, excavations, confined space entry, welding/burning operations, rigging sketches, etc.)

Certification of Review: The Buyer Management (e.g., FCE) responsible for overseeing the work, the competent person preparing the formal work procedure, the Seller Work Supervisor, the Buyer Compliance representative, and the Seller OSSR responsible for the work shall review and sign the formal work procedure.

Signature(s): _____ understands the requirements of this procedure, has briefed all Seller employees affected by this procedure and is the designated Seller representative responsible for supervising work in accordance with this procedure.

EXHIBIT 28

DISPOSAL/RECYCLING FACILITY ACCEPTANCE FORM

Date: _____

BMPC Project Name: _____

Service Request Number: _____ NPD: _____

Waste Generator (General Contractor coordinating disposal)

Name: _____

Address: _____

Contact: _____

Phone Number: _____

By signing this form, I hereby certify that I (a) am authorized, (b) have the capacity, and (c) will provide or assure that the ultimate disposal method is followed for the particular waste as shown on the shipping papers from the Bechtel Marine Propulsion Corporation.

Description of Waste (Profile)	• Ultimate Disposal Method	Ultimate Disposal Facility Location	Comments

• **L= Landfill** **R= Recycled** **ER=Energy Recovery** **B= Burn/Incineration**

Note: Copies of transporter and waste handling facility permits must be on file - otherwise attach to this form.

DISPOSAL/RECYCLING FACILITY (Authorized Representative)

Name: _____

Signature: _____

Address: _____

Phone Number: _____

EXHIBIT 29

WEIGHT HANDLING EQUIPMENT

**WORK SCOPE TO
GENERAL SPECIFICATION S-12**

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ATTACHMENT A	CRANE AND RIGGING GEAR ACCIDENT REPORT
ATTACHMENT B	CONTRACTOR CRANE (OR ALTERNATE MACHINE USED TO LIFT SUSPENDED LOAD) AND RIGGING GEAR REQUIREMENTS
ATTACHMENT C	CONTRACTOR CRANE OR RIGGING OPERATION CHECKLIST

SUPPLEMENTAL WORK SCOPE TO GENERAL SPECIFICATION S-12 FOR USE OF WEIGHT HANDLING EQUIPMENT

I. REQUIREMENTS APPLICABLE TO SUBCONTRACTOR OPERATION OF SELLER-FURNISHED WEIGHT HANDLING EQUIPMENT (WHE) AT BMPC KNOLLS AND KESSELRING SITES

A. GENERAL

The Seller shall meet or exceed all applicable requirements of 29 CFR 1926 (Safety and Health Regulations for Construction, Subparts H, N, O, R, and CC, and requirements incorporated by reference therein) and the applicable sections of ANSI/ASME standards (including, but not limited to, B30.5 – Mobile and Locomotive Cranes, B30.9 – Slings, B30.10 – Hooks, B30.20 – Below the Hook Lifting Devices, B30.21 – Manually Lever Operated Hoist, B30.26 – Rigging Hardware), and ANSI/ITSDF standards (including B56.1 – Low Lift and High Lift Trucks, and B56.6 – Rough Terrain Forklift Trucks) for the maintenance, inspection, testing, certification, repair, alteration, and operation of Weight Handling Equipment (WHE) and rigging equipment that is used by the Seller at Buyer Sites, except as explicitly noted herein.

WHE is defined herein as mobile cranes or other powered equipment used *to lift loads suspended by rigging*. Although Subpart CC of 29 CFR 1926 states that its applicability to multi-purpose machines is limited to equipment configured to *hoist and lower (by means of a winch or hook) and horizontally move a suspended load*, the requirements of Subpart CC are invoked for subcontract work on Buyer's Sites that includes the use of powered equipment used *to lift loads suspended by rigging*. Rigging equipment is broadly defined herein as slings, shackles, links, swivel hoist rings, spreader bars and beams, portable manual and powered hoists, portable load indicators, other below the hook lifting devices, portable A-frames, portable floor cranes, portable gantries, and similar load-bearing equipment.

The Seller shall also comply with site-specific requirements and special hazard warnings for WHE safety and operation, as identified by the Buyer, for considerations including (but not limited to) allowable equipment access routes, permissible proximity to energized utilities, and ground/surface loading limitations. Note that control of proximity of mobile cranes to electrical power lines – for cranes in transit with no load and their boom or mast lowered - shall be in accordance with 29 CFR 1926.1407 through 1926.1411, using the definition of *power lines* contained in 1926.1401 ("*electric transmission and distribution lines*"). The Buyer interprets "transmission and distribution lines" to mean uninsulated conductors of high energy (greater than 600 volts) electrical systems for crane transit purposes only. The more restrictive requirements of ASME B30.5 and B30.22 - for cranes in transit with no load and their boom or mast lowered – will not be enforced on Buyer's Sites.

The Seller shall advise Buyer's Representative of the estimated time (morning or afternoon) and date for the performance of planned weight handling (WH) work.. Lifting of any load suspended by rigging – anywhere on Buyer's Site – requires that Buyer's Representative is aware of the work and approves (including verbal approval) the execution of the work; this includes set-up and assembly or disassembly (crane erection) work for mobile cranes.

A site-specific safety requirement for mobile crane operations is that the Seller shall ensure that the mobile crane is not operated in any quadrant of rotation – or in any method – that subjects area personnel to unnecessary risks. This includes Seller responsibility to effect evacuation of areas (including areas inside of buildings) in the fall zone of the crane boom and load, during lifting operations. Only personnel

essential to the operation may be in the load or boom fall zone. The Seller should conservatively restrict personnel access to areas that could be struck if the load drops or the crane boom collapses; personnel who are not essential to the operation should not be permitted inside of the fall zone. The Seller shall identify in the Pre-Job Brief (and the lift plan, if applicable) the allowable quadrants of operation for the crane, so that the entire area within reach of the crane boom length does not need to be evacuated.

The annual / periodic inspection of mobile cranes to be used on site should be performed by a Level 3 Inspector, as recognized by the Crane Institute of America, Inc. A Level 3 inspection is defined as the application of the most stringent or restrictive requirement among OSHA (including other standards *incorporated by reference* into OSHA), ASME, Power Crane and Shovel Association (PCSA), and equipment manufacturer and industry-recognized best practices applied to each item and attribute inspected. Maintenance and repair personnel for mobile cranes must meet the requirements of 29 CFR 1926.1429 (b). Level 3 inspection includes voluntary compliance with standards and practices that are *not* required by law.

The manufacturer's operating and safety instructions shall accompany all cranes, forklifts, and other weight handling equipment used at Buyer's Sites. The Seller shall inform Buyer's Representative, who in turn will notify Buyer's Lifting and Handling department, at least 4 working hours (48 hours for mobile cranes or derricks) prior to using WHE or rigging to lift any loads on site. A certificate of compliance listing the above standards, as applicable, shall be completed by the WHE user (the Seller) and posted on the WHE machine before lifting a load suspended by rigging equipment. See [Attachment B](#) for the required certificate of compliance (Figure P-1). Buyer's Weight Handling representative will complete [Attachment C](#) and verify satisfaction of the requirements therein prior to and during the lifting of a load suspended by rigging equipment. Additional requirements for operations involving High Risk Work (HRW) are identified in Part I, Section E and EXHIBIT 6 of S-12.

All load-bearing hooks used on cranes, hoists, and other machines shall have self-closing latches. All load-bearing hooks used on rigging gear shall have self-closing latches (if the hook includes provision for a latch), or the throat opening shall be 'moused' or otherwise secured to prevent the attached item from coming free of the hook under a slack condition. The following exceptions apply and shall be approved by the Buyer on a case basis: items where the hook throat is fully obstructed and not available for manual securing (such as sorting hooks used to lift a metal plate on edge), and lifts where securing the hook throat increases the danger to personnel. Crane load hooks shall have permanent tram marks for use in measuring possible changes in the size of the throat opening.

B. REQUIRED VALIDATION

1. The Seller shall make available to the Buyer for inspection a Certificate of Compliance (Figure P-1) upon arrival at Buyer's Site with WHE or rigging equipment (or – for equipment already on site – the Certificate of Compliance must be completed and signed prior to lifting loads suspended by rigging). The Certificate of Compliance shall verify Seller conformity with the requirements set forth in this document, including (as applicable) but not limited to:
 - ASME B30.5: Mobile Cranes
 - 1) The Seller shall ensure that operators carry current proof of training and certification as required by NYS Department of Labor. Operators must also meet all applicable requirements of 29 CFR 1926.1427, and ASME B30.5 (5-3.1).

- 2) The Seller shall make available to the Buyer for inspection the documentation of the last three monthly inspections and the current annual/comprehensive inspection (and results of tests, if applicable) for the crane(s) to be utilized in the lifting operation. Documentation shall be maintained in accordance with the requirements of 29 CFR 1926 Subpart CC. Monthly inspection records are not required for cases when the crane was sublet to another entity at the time the monthly inspection was due.
- 3) The Seller shall ensure that signal persons carry proof of qualification in accordance with the requirements of 29 CFR 1926.1428(c).
- ASME B30.9: Slings
 - 1) The Seller shall make available to the Buyer for inspection documentation that the riggers have been trained to inspect and utilize slings.
 - 2) The Seller shall make available to the Buyer for inspection the documentation of the periodic inspections for slings to be utilized in the lifting activities (chain, synthetic, or wire rope).
- ASME B30.26: Rigging hardware
 - 1) The Seller shall make available to the Buyer for inspection documentation that the riggers that have been trained to inspect and utilize rigging hardware.
 - 2) The Seller shall make available to the Buyer for inspection documentation of the most recent periodic inspection (for detachable load indicating devices)
- ANSI / ITSDF B56.6: Rough Terrain Forklifts
 - 1) The Seller shall make available to the Buyer for inspection documentation that the operators have been trained and qualified to inspect and utilize rough terrain forklifts and attachments.
 - 2) The Seller shall make available to the Buyer for inspection the documentation of the annual inspections for the forklift(s) to be utilized in the lifting operation.
2. For multi-purpose machines, material handling equipment, and construction equipment utilized to *lift loads suspended by rigging equipment*, the Seller shall make available to the Buyer for inspection proof or authorization from the Original Equipment Manufacturer (OEM) that the machine is capable of making lifts of loads suspended by rigging equipment.
3. The Seller shall notify Buyer 48 hours in advance of the arrival of a mobile crane at Buyer's Site. Exceptions to this requirement are cases when the Buyer specifically requests the Seller to provide mobile crane services in less than 48 hours, such as for emergent work or to address an unplanned event. The crane and any other WHE associated with the planned lifting operation may be subject to inspection by Buyer personnel. Equipment found to be unsatisfactory by Buyer shall be promptly removed from the site and repaired / replaced with satisfactory items at no cost to Buyer.
4. The Seller shall complete the attached Certificate of Compliance prior to the performance of WHE activities involving the lifting of a load suspended by rigging equipment. The completed Certificate of Compliance shall be posted on the equipment or maintained in the Seller's on-site office.

C. EXPERIENCE AND QUALIFICATIONS

Operators of all mobile and commercial truck-mounted cranes with OEM capacities greater than 2,000 pounds (see 29 CFR 1926.1441) shall be certified to operate that equipment as required by NYS Department of Labor. Operators of mobile cranes and forklifts must satisfy the age, physical, language, knowledge, and skill requirements of

the applicable ANSI/ASME/ITSDF standard (e.g. ANSI/ASME B30.5 for mobile cranes, ANSI/ASME B30.22 for articulating boom cranes, ANSI/ITSDF B56.1 for forklifts, etc). Forklift operators shall carry a license to operate the specific equipment, issued by either a competent person employed by the Seller or an accredited third-party training organization.

The Seller shall make available to the Buyer for inspection certification that personnel operating weight handling equipment satisfy the applicable requirements for the operation of the equipment and that these personnel have the required knowledge and skill to safely operate the equipment. Buyer reserves the right to request objective evidence or to require a demonstration of operational proficiency to substantiate certification.

D. CRITICAL LIFTS

Critical Lifts, as defined by the Buyer, are:

- Any lift over 75% of the rated crane (or hoist or other WHE machine) capacity (per 29 CFR 1926.751)
- Mobile crane lifts of greater than 75% of the capacity of the crane, considering the reeving configuration and at the radius of the lift (per 29 CFR 1926.1417 (o)(3)(ii))
- Lifts involving more than one crane or hoist or other WHE machine, including the simultaneous use of two hoists on one crane (per 29 CFR 1926.1432)
- Lifts of personnel (per 29 CFR 1926.1431)
- Lifts made in the vicinity of overhead power lines (per 29 CFR 1926.1410)
- Erection of cranes (per 29 CFR 1926.1404 through 1926.1406)
- Lifts that, as determined by the Buyer, involve:
 - Non-routine rigging (e.g., more than four rigging attachment points) or operation (e.g., pick and carry lifts by mobile cranes, per 29 CFR 1926.1417 (u))
 - Sensitive equipment
 - Unusual safety risks

These types of High Risk Work (HRW) lifts require the development and submission of a HRW Formal Work Procedure (FWP). The FWP shall be submitted to the Buyer for review and approval prior to making the lift. For other lifting evolutions deemed by Buyer to be unique or unusual in nature, Buyer reserves the right to require the Seller to provide lifting plans for review and approval prior to those activities taking place. Lifting plans shall include the following, as applicable:

1. The size and weight of the load to be lifted, including crane and rigging components that add weight. The crane OEM's maximum load capacities for the entire range of the lift shall also be provided.
2. The lift geometry, including the crane position, boom length and angle, height of lift and radius for the entire range of the lift, and allowable quadrants of operation (to control the extent of the fall zone). This applies to both single and tandem crane lifts.
3. A rigging plan, showing the lift points, rigging gear and rigging procedures.
4. The environmental and other conditions under which lift operations are to be stopped. The requirements of 29 CFR 1926 Subpart CC and this document contain criteria for assessment of environmental conditions; the Seller shall conform to these criteria.
5. Document compliance with applicable portion(s) of 29 CFR 1926 (Subparts N, O, R, and Subpart CC for Mobile Cranes and Derricks) and the requirements of this document. Specifically note which sections apply to the subject work.

E. ENVIRONMENTAL CONDITIONS

In the absence of a crane manufacturer's instructions regarding maximum wind speeds for operation, any wind speed in excess of 25 mph shall be reason to suspend (or postpone) outdoor crane operations. Outdoor mobile crane operations shall also be suspended when lightning is prevalent in the area. The Seller shall conform to the criteria of 29 CFR 1926 Subpart CC and this document for assessment of environmental conditions.

F. ACCIDENTS

The Seller (the Crane User, as defined in ASME B30.5 and B30.22) shall notify Buyer's Representative immediately (in no case later than 1 hour hence) when it is suspected or believed that an accident – as defined herein – has occurred. Buyer's Representative, in turn, will make appropriate notifications necessary to initiate Buyer's investigation of the accident. If it is determined that an accident has occurred, the Seller shall secure the accident site and preserve the scene of the accident, i.e. stop all operations and, if it can be safely done, leave the load suspended as applicable. The Seller shall conduct an accident investigation and determine the root cause of the accident. WHE operations shall not proceed until the cause of the accident is determined and corrective actions have been implemented to the satisfaction of the Buyer.

The Seller shall provide to the Buyer within 30 days of any WHE accident a Weight Handling Equipment Accident Report using the Figure provided (See [Attachment A](#)). The report shall include a summary of circumstances, and explanation of cause(s), photographs (if available), and corrective actions taken.

Crane Accidents

For the purpose of this definition, it is assumed there is an "operating envelope" around any crane, and inside the envelope are the following elements:

- a. The crane.
- b. The operator.
- c. The riggers and crane walker.
- d. Other personnel involved in the operation (supervisor, mechanic, tag line handler, engineer, etc.).
- e. The rigging gear between the hook and the load.
- f. The load.
- g. The crane's supporting structure (ground, rail, etc.).

Definition - A crane accident occurs when any of the elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing, resulting in the following:

- a. Personnel injury or death. Minor injuries inherent in any industrial operation, including strains and repetitive motion related injuries, shall be reported via the Seller's normal personnel injury reporting process, in lieu of these requirements.
- b. Material or equipment damage.
- c. Dropped load.
- d. Derailment.
- e. Two-blocking.
- f. Overload (including load tests when the test load tolerance is exceeded)
- g. Collision, including *unplanned contact between the load, crane, and/or other objects*.

Items c, d, e, f, and g in the Definition are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

Exception - If a crane is used as an anchor point for a portable hoist/rigging gear, a rigging gear accident as defined below is not considered a crane accident if the crane is not being operated (no functions are in motion) at the time of the rigging gear accident, unless the accident results in an overload or damage to the crane, in which case it shall be reported as a crane accident.

Rigging Gear Accidents

For the purpose of this definition, it is assumed there is an “operating envelope” around any weight handling operation, and inside the envelope are the following:

- a. Rigging gear and miscellaneous equipment.
- b. The user of the gear or equipment.
- c. Other personnel involved in the operation (supervisor, mechanic, tag line handler, etc.).
- d. The load.
- e. The gear or equipment’s supporting structure.
- f. The load’s rigging path.

Definition - A rigging gear accident occurs when any of the elements in the operating envelope fails to perform correctly during weight handling operations resulting in the following:

- a. Personnel injury or death. Minor injuries that are inherent in any industrial operation, including strains and repetitive motion related injuries, shall be reported via the Seller’s normal personnel injury reporting process, in lieu of these requirements.
- b. Material or equipment damage that requires the damaged item to be repaired because it can no longer perform its intended function. This does not include superficial damage such as scratched paint, damaged lagging, or normal wear on rigging gear.
- c. Dropped load.
- d. Two-blocking of cranes and powered hoists.
- e. Overload (including load tests when the test load tolerance is exceeded)

Items c, d, and e in the Definition are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped load, damaged load, etc.).

G. NON-CRANE EQUIPMENT AS WHE

For multi-purpose machines, material handling equipment, and construction equipment (backhoe, etc) used to lift loads suspended by rigging equipment, make available to the Buyer for inspection proof or authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. The Seller shall demonstrate to Buyer L&H personnel that the machine is configured to make such lifts and is equipped with a load chart.

H. HOISTING OF PERSONNEL

Generally, hoisting of personnel on a platform suspended from a crane or lifted with a forklift is prohibited. When conventional means of reaching the work site is not possible because of structural design or work site conditions, specific safety plans formulated in accordance with 29 CFR 1926 (Subpart O, Paragraph .602 and Subpart CC, Paragraph .1431) must be submitted to and approved by Buyer’s L&H Engineering prior to hoisting personnel. In addition to the requirements delineated in 29 CFR 1926.1431 (Subpart CC) the following requirements are applicable:

- Lift and lowering speeds shall not exceed 100 feet per minute.
- For cranes with outriggers, the outriggers shall be fully extended and set.
- Only wire rope or alloy chain slings shall be used for personnel lifting; these slings shall be used for no other purpose. Synthetic slings are not permitted.

I. AUDITS AND SURVEILLANCE

Buyer will perform audits and surveillances of rigging and lifting and handling operations, to verify Seller compliance with the requirements outlined herein. In addition to audits and surveillance performed by Buyer’s compliance organization

personnel, Buyer will also perform work site engineering and rigger/operator observation of work evolutions and (if needed) supplemental direction to stop work until identified non-compliance or unsafe conditions are corrected.

J. SAFETY DEVICE REQUIREMENT

Mobile cranes operated at Buyer's Sites must be equipped with safety devices as noted in 29 CFR 1926.1415. These devices must function properly; alternative measures are not permitted to be used. Mobile cranes operated at Buyer's Sites must also be equipped with operational aids as noted in 29 CFR 1926.1416. Operational aids that are not functioning properly must be repaired within the time frame noted in 29 CFR 1926.1416, or the temporary alternative measures listed therein must be implemented before work continues. The Seller shall include on the Certificate of Compliance (see [Attachment B](#)) certification that all Seller crane operators at Buyer's Site have been trained not to bypass operational safety devices or operational aids (e.g. anti-two block devices) during lifting operations. The Certification shall be posted on the crane.

K. WHE INSPECTIONS

To verify compliance with the above requirements, all weight handling equipment brought onto Buyer's Site may be inspected by Buyer personnel prior to equipment set-up or performance of lifting and handling work or rigging operations. The Seller shall provide to the Buyer 48 hours advance notice before WHE arrival at (or delivery to) the site, to facilitate a pre-work inspection for adequacy and suitability for the intended purpose. For multi-purpose machines, material handling equipment, and construction equipment already in-use on-site by the Seller, the Seller shall notify Buyer's Representative at least four hours prior to using this equipment for the lifting of a load suspended by rigging equipment on-site.

II. **ADDITIONAL REQUIREMENTS APPLICABLE TO BUYER-OWNED, CONTRACTOR-OPERATED WHE**

Operation of Buyer-owned WHE (or BMPC-owned WHE, or WHE owned by an entity of the Navy or the Naval Reactors Program) by Seller personnel is currently permitted only for Seller personnel who have been trained and qualified to the current revision of the Naval Facilities Engineering Command standard for the Management of Weight Handling Equipment (NAVFAC P-307), and licensed by the Buyer.

ATTACHMENT A

CRANE AND RIGGING GEAR ACCIDENT REPORT									
Accident Category: <input type="checkbox"/> Crane Accident <input type="checkbox"/> Rigging Gear Accident									
From:					To:				
Activity							Report No:		
Crane No:		Cat:		Accident Date:			Time: hrs		
Category of Service: <input type="checkbox"/> SPS: <input type="checkbox"/> GPS:		Crane Type:		Crane Manufacturer:					
Was Crane/Rigging Gear Being Used in SPS? Yes _____ No _____					Was Crane/Rigging Gear Being Used in a Complex or Critical Lift or Critical Non-Crane rigging operation? Yes _____ No _____				
Location:					Weather:				
Crane Capacity:			Hook Capacity:			Weight of Load on Hook:			
Fatality or Permanent Total Disability? YES			NO			Material/Property Cost Estimate: \$			
Reported to NAVSAFECEN? YES			NO						
Accident Type:									
<input type="checkbox"/> Personal Injury		<input type="checkbox"/> Overload		<input type="checkbox"/> Derail		<input type="checkbox"/> Damaged Rigging Gear			
<input type="checkbox"/> Load Collision		<input type="checkbox"/> Two Block		<input type="checkbox"/> Dropped Load		<input type="checkbox"/> Damaged Crane			
<input type="checkbox"/> Crane Collision		<input type="checkbox"/> Damaged Load		<input type="checkbox"/> Other/Specify					
Cause of Accident:									
<input type="checkbox"/> Improper Operation		<input type="checkbox"/> Equipment Failure		<input type="checkbox"/> Inadequate Visibility					
<input type="checkbox"/> Improper Rigging		<input type="checkbox"/> Switch Alignment		<input type="checkbox"/> Inadequate Communication					
<input type="checkbox"/> Track Condition		<input type="checkbox"/> Procedural Failure		<input type="checkbox"/> Other/Specify: _____					
Chargeable to:									
<input type="checkbox"/> Crane Walker		<input type="checkbox"/> Rigger		<input type="checkbox"/> Operator					
<input type="checkbox"/> Maintenance		<input type="checkbox"/> Management/Supervision		<input type="checkbox"/> Other/Specify					
Crane Function:									
<input type="checkbox"/> Travel	<input type="checkbox"/> Hoist	<input type="checkbox"/> Rotate	<input type="checkbox"/> Luffing	<input type="checkbox"/> Lower	<input type="checkbox"/> Telescoping	<input type="checkbox"/> Other	<input type="checkbox"/> N/A		
Is this accident indicative of a recurring problem? <input type="checkbox"/> Yes <input type="checkbox"/> No									
If Yes, list Accident Report Nos.:									
ATTACH COMPLETE AND CONCISE SITUATION DESCRIPTION AND CORRECTIVE/PREVENTATIVE ACTIONS TAKEN AS ENCLOSURE (1). Include probable cause and contributing factors. Assess damages and define responsibility. For equipment malfunction or failure include specific description of the component and the resulting effect or problem caused by the malfunction or failure. List Immediate & Long Term Corrective/Preventative Actions assigned and responsible codes.									
Preparer's Signature			Phone and email			Title:		Date:	
Concurrences (Include Signature, Title, and Date)									
					Title:		Date:		
					Title:		Date:		
Certifying Official (Crane Accident Only):					Title:		Date:		

ATTACHMENT C

CONTRACTOR CRANE OR RIGGING OPERATION CHECKLIST			
FIGURE P2 (1 of 2)		YES	NO
1	Is the Certificate of Compliance, P-1, in the operator's cab (or in the contractor's on-site office for rigging operations) with the current operator's name listed?		
2	Is the crane/machine transited to and from the job site correctly? Are the OEM instructions for travel being followed?		
3	Does the operator know the weight of the load to be lifted?		
4	Is the load to be lifted within the crane/machine manufacturer's rated capacity in its present configuration?		
5	Are outriggers or stabilizers required?		
6	If outriggers are required, are outriggers fully extended and down, and the crane load off the wheels?		
7	Is the crane/machine level and on firm ground, if the ground is not firm is the crane/machine blocked?		
8	If blocking is required, is the entire surface of the outrigger pad supported and is the blocking material of sufficient strength to safely support the loaded outrigger pad?		
9	If outriggers are not used, is the crane/machine rated for on-rubber lifts by the manufacturer's load chart? If stabilizers are used and not outriggers and the wheels are not off the ground is this the correct setup in accordance with the OEM?		
10	Is the swing radius of the crane counterweight clear of people and obstructions and accessible areas within the swing area barricaded to prevent injury or damage?		
11	Has the hook been centered over the load in such a manner to minimize swing?		
12	Is the load well secured and balanced in the sling or lifting device before it is lifted more than a few inches?		
13	Is the lift and swing path clear of obstructions?		
14	If rotation of the load being lifted is hazardous, is a tag or restraint line being used?		
15	Are personnel prevented from standing or passing under a suspended load?		
16	Is the operator's attention diverted?		
17	Are proper signals being used at all times? Is the operator responding properly to the signals? Are radios used for blind lifts?		
18	Is the load lifted a few inches to ensure it is secure and balanced?		
19	Are empty hooks lashed or otherwise secured during travel to prevent swinging?		
20	Does the operator remain at the controls while the load is suspended?		
21	Do the operations ensure that side loading is prohibited?		
22	Are personnel prevented from riding on a load?		
23	Are start and stop motions in a smooth fluid motion (no sudden acceleration or deceleration)?		
24	If operating near electric power lines, are the rules and guidelines understood and adhered to?		
25	Is the lift a critical lift?		
26	If so, are all regulations understood and check-off sheets initialed and signed off?		

CONTRACTOR CRANE OR RIGGING OPERATION CHECKLIST

FIGURE P2 (2 of 2)

27	Are any overhead power lines in the vicinity?		
28	If so, are complex lift rules and 1926.1407 – 1411 being followed?		
29	If pick and carry operations are allowed and performed, are OEM directions followed (e.g. rotation lock engaged, boom centered over front or rear, etc.)?		
30	When the crane/machine is left unattended, is it in a safe condition?		
31	Is rigging gear undamaged and acceptable for the application?		
32	Does rigging gear meet applicable ASME or host country standards (e.g. ASME B30.9 for slings, B30.10 for hooks, B30.26 for hardware such as shackles, safety hoist rings, eyebolts, etc, B30.20 for below the hook lifting devices, etc.)?		
33	Is the rigging gear inspected prior to use?		
34	Is chafing gear used to protect slings (especially synthetic slings) and equipment from damage due to sharp corners and edges?		
35	Is the rigging gear used in accordance with its working load limit? Is the load limit visible?		
36	Are positive latching devices used on crane and rigging hooks, or are the hooks “moused”?		
Contractor:		Subcontractor:	
Location:		Date:	
Notes:			
Signature of Contracting Officer’s Representative:			

EXHIBIT 30: LOCKOUT TAGOUT PROCEDURE

EQUIPMENT/SYSTEM:	Procedure Reference / ID
PURPOSE: This procedure, establishes the minimum requirements for the lockout of energy isolating devices whenever the identified maintenance or servicing is performed on the equipment identified above.	Approved By: _____ <small>LOTO Work Supervisor</small>
SCOPE / REASON FOR LOTO:	Name of initial PAE or group responsible for GROUP LOTO: _____
	Name/Signature of Second Checker _____

SHUTDOWN / ISOLATION PROCEDURE

1) Notify Affected Employees that servicing or maintenance is required and that the machine or equipment is being locked out. 2) Shutdown the machine or equipment per normal stopping procedures. 3) Identify all energy sources to be isolated below and lockout/tagout each source:			<input type="checkbox"/> Continuation Form Used
Description of Energy-Isolating Device (e.g. Panel PP-1 Circuit # 5, Valve V-16)	Location of Energy-Isolating Device (e.g. Test Facility Name, Building/Room)	Energy Type and Magnitude (e.g. 480V _{ac} , 200 PSIG)	Position or Condition of Energy Isolating Device
4) Perform Second Check 5) Steps to release all stored energy (pneumatics, capacitors, steam, etc.) a. b.			
6) Verify absence of energy by: Opening drain/vent <input type="checkbox"/> Gauge reading <input type="checkbox"/> Start/Stop Switch Operated <input type="checkbox"/> Visually Disconnected <input type="checkbox"/> Live/Dead/Live <input type="checkbox"/> Other <input type="checkbox"/> Explain: _____			

RESTORATION PROCEDURE

1) Check the machine or equipment and the immediate area around the machine to ensure that nonessential items have been removed and the machine or equipment components are operationally intact. 2) Check the work area to ensure that all employees have been safely positioned or removed from the area. 3) Steps to restore system a. b.
4) Notify Affected Employees that the servicing or maintenance is completed and that the machine or equipment is ready for use.

Active Authorized Employees (Signature indicates that you fully understand the procedure and concur with the LOTO and placed your lock and/or tag on the energy isolating device in the correct position or on the lockbox.)			Clearance (Authorized Employee's signature and date/time indicates all employee's work is complete and personal lock(s) are removed.)		Primary Authorized Employee (Signature indicates the PAE understands LOTO and the procedure steps and is responsible for GROUP LOTO.)	
Print Name	Signature	Date	Signature	Date	Signature	Date/Time

EQUIPMENT/SYSTEM:	Procedure Reference / ID
-------------------	-----------------------------

SHUTDOWN / ISOLATION PROCEDURE

Description of Energy-Isolating Device	Location of Energy-Isolating Device	Energy Type and Magnitude	Position or Condition of Energy Isolating Device

Active Authorized Employees (Signature indicates that you fully understand the procedure and concur with the LOTO and placed your lock and/or tag on the energy isolating device in the correct position or on the lockbox.)			Clearance (Authorized Employee's signature and date/time indicates all employee's work is complete and personal lock(s) are removed.)		Primary Authorized Employee (Signature indicates the PAE understands LOTO and the procedure steps and is responsible for GROUP LOTO.)	
Print Name	Signature	Date	Signature	Date	Signature	Date/Time

EXHIBIT 31A

Temporary Systems Initiation Check-Off Sheet

Temporary System Title: _____ Index Number: _____

Step	Item to be Checked	Preparer Initial Appropriate Block	
		Yes	N/A
1.	The procedure (Exhibit 31B) for the temporary system is complete, approved as required, and available to those as necessary		
2.	The diagram (Exhibit 31C) for the temporary system is complete, approved as required, and available to those as necessary		
3.	Subcontractor has performed training of subcontractor and applicable BMPC operating personnel on the temporary system description, function, operation, and preventive maintenance.		
4.	System installation and inspection is complete and system diagram and procedure posted at location.	_____ Seller Initial	
5.	System Diagram and procedure posted in Site log book. List location(s): 1) _____ 2) _____	_____ Buyer Initial	
6.	<p>The above described actions are complete. The temporary system has been entered into the Temporary Systems Log. Concurrence is given by the system owner to place the temporary system in service.</p> <p>_____ System Owner Signature Date</p> <p>_____ Site Systems Supervisor Date</p>		
<p>Log other locations where the Temporary System Operating Procedures and Diagram have been distributed here.</p>			

EXHIBIT 31B
Temporary System Operating Procedures

System Title/Description: _____ Number: _____

A. Precautions: _____

B. Starting: _____

C. Operating: _____

D. Securing: _____

E. Casualty Operation/Contact Number: _____

F. Procedure Document (if applicable): _____

Submitted: _____
Seller Representative Date

Buyer Approval:

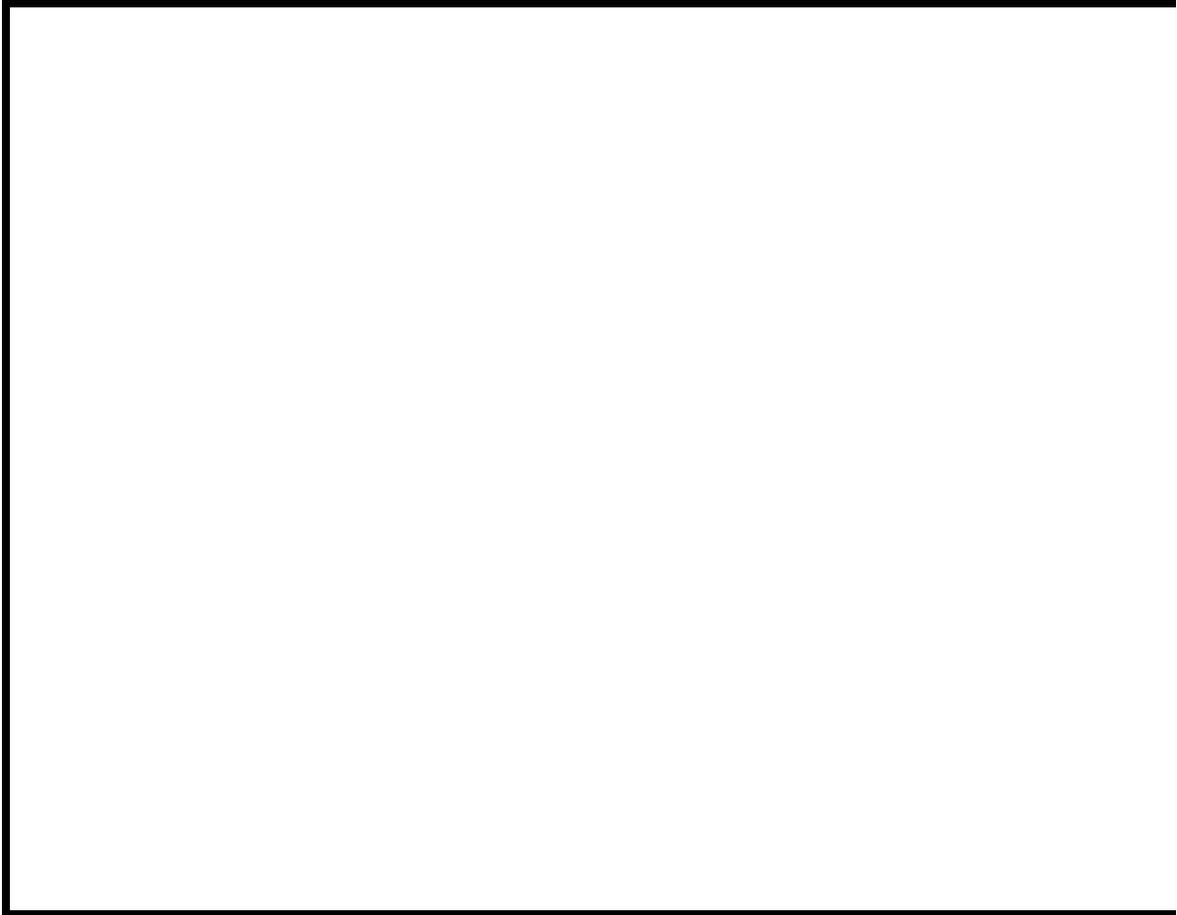
_____ Site Systems Engineering (KSO) Date	_____ RadCon (if applicable) Date
_____ Infrastructure Systems Engineering (Knolls)	

_____ EHS Date	_____ QA (if applicable) Date
-------------------	----------------------------------

Other (if any) Date

EXHIBIT 31C
Temporary System Diagram

System Title/Description _____ Number: _____



NOTES:

1. Sketch/drawing by Seller to show layouts of major system components and assemblies.
2. Pre-engineered assemblies shall include system schematics and/or one-line drawings and all other applicable manufacturer's product literature and operating instructions as a separate attachment.
3. Subcontractor/Seller designed assemblies shall include items listed in Note 2 above as well as a bill-of-materials to include component ratings.
4. Sketch/drawing to show all sources of power/energy and the isolation devices of these sources of power/energy so that the temporary system (or portions of the temporary system) can be locked out and tagged out.

Legend:

Buyer Approvals

Approval: _____
Site Systems Engineering (KSO) Date
Infrastructure Systems Engineering (Knolls)

Approval: _____
QA (if applicable) Date

Approval: _____
EHS Date

Approval: _____
Other (if applicable) Date

Approval: _____
RadCon (if applicable) Date

EXHIBIT 32

SOIL DISTURBANCE EVALUATION AND EROSION AND SEDIMENT CONTROL PLAN DEVELOPMENT FORM

This form is provided to ensure that the required elements of an erosion and sediment control (E&SC) plan are properly developed for projects that have soil disturbances less than 1 acre. Use this form to calculate and document the total amount of soil disturbance, and determine that the appropriate measures are included in an E&SC Plan, as required.

Project Title and Location:

<p>Project Area: _____ Ft²</p> <p>Total Existing Impervious Surface: _____ Ft²</p> <p>Total Proposed Impervious Area: _____ Ft²</p> <p>Change: _____ Ft²</p>	<p>Total Project Area of Disturbance: _____ Ft²</p> <p>Total Existing Pervious (Vegetated) Area: _____ Ft²</p> <p>Total Proposed Pervious Area: _____ Ft²</p> <p>Change: _____ Ft²</p>
--	--

Yes / No	This project and proposed changes will have the potential to disturb one (1) or more acres of soil. This includes the limits of potential disturbance, and storage locations of erosive materials like stockpiled soils and excavation spoils (soils to be taken to the CSMA are not included in this calculation). If the answer to this question is "Yes," stop and notify Environmental Engineering.
Yes / No	This project is part of a larger common plan of development that would disturb one or more acres.

If the total disturbed area is 1 acre or greater, the project will need coverage under a SPDES Stormwater General Permit. Contact the Environmental office at your Site.

If the proposed project does not meet one of the categorical exemptions, please complete page 2.

EXHIBIT 32

SOIL DISTURBANCE EVALUATION AND EROSION AND SEDIMENT CONTROL PLAN DEVELOPMENT FORM

Construction Drawing/Sketch Requirements		Project Note Requirements	
(initial)	Total Site Area	(initial)	Construction sequence of operations to include:
	Site Area(s) to be disturbed		Construction activities
	Existing pervious surface (vegetated)		Clearing and grubbing
	Locations of on-site bodies of water and/or wetlands		E&SC system installation
	Distance to on-site bodies of water and/or wetlands		Excavation and grading
	Locations of off-site bodies of water and/or wetlands		Utility and infrastructure removal, installation and repair
	Distance to off-site bodies of water and/or wetlands		E&SC system removal
	Wetlands that could be affected by the activity		Temporary and permanent stabilization
	Stormwater controls affected by the activity (i.e., catch basins, ditches, etc.)		Additional activities that will result in soil disturbance
	Existing slopes/grades		Spill prevention and response measures
	Final slopes/grades		Description of controls to reduce pollutants from stored materials
	Dimensions of temporary E&SC	Justification and Additional Project Information	
	Length(s) of temporary E&SC	<i>(Provide additional project information, and/or justification for deviations from the E&SC Plan and Project Notes requirements.)</i>	
	Description of structural E&SC to divert, store, or otherwise limit run-on and run-off and the discharge of sediment from exposed areas of the site.		

Notes:

1. Attach a project drawing / sketch, that is to scale, or has dimensions clearly labeled.
2. The Project Note requirements may be addressed as construction notes on drawing / sketch.

Form Prepared By:

	_____	_____	_____
	Name	Signature	Date
Cognizant Engineering Organization Concurrence:	_____	_____	_____
	Name	Signature	Date
Environmental Engineering Concurrence:	_____	_____	_____
	Name	Signature	Date

Exhibit 33

WORK RELEASE/ WORK AUTHORIZATION FORM

Instructions:

The Seller Representative shall conduct a daily Pre-Job Brief / “Plan of the Day” prior to starting any type of work. Prior to the briefing, the Seller shall prepare a written safety briefing (using their corporate format or the attached BMPC template), which shall be reviewed during this meeting. Attendance shall be documented via an attendance sheet and shall be maintained at the job site.

In the event the contractor is performing High Risk Work (HRW) evolution(s) for that day, a Buyer’s Representative and BMPC management representative shall be present for the first/initial briefing. Any other briefing thereafter involving high risk work must be attended by one Buyer’s Representative, typically the Subcontractor Technical Representative (STR) for the project. Refer to High Risk Work requirements for further details.

The scope of work for the day shall be bounded (described and not exceeded), hazards and mitigation strategies shall be discussed, interferences (overhead, underground and work area) shall be descriptive in nature, feedback from the workforce and BMPC shall be elicited, and any questions / concerns from all parties shall be addressed by the Seller Representative. If a revised scope of work is necessary during the shift and/or additional employees arrive later to work, the Seller Representative shall notify the STR and conduct a revised briefing for all workers or repeat the original briefing to the newly arrived employees.

The objective of a good pre-job brief is to communicate an understanding of scope, hazards and mitigation strategies to enable the safe completion of work.

Exhibit 33

WORK RELEASE/ WORK AUTHORIZATION FORM

Specific Scope of Work not covered above:
Deliveries:
Inspections, Repairs, Calibrations expected today:
Special Work Requirements / Work Restrictions / Work Controls:
Special Surveillances Required:
Discuss any lessons learned from previous projects:
Discuss any changes to STOP WORK procedures and/or evacuation plans:

By my signature, I indicate that I have conducted the pre-job briefing covering all items indicated above concerning the requirements specified for the work to be performed and all workers will be or have been briefed prior to starting work. Buyer representative has been informed/concurs with the work.

Seller Representative
Conducting Briefing: _____ Date/Time: _____

Exhibit 33

WORK RELEASE/ WORK AUTHORIZATION FORM

Job Title/No.: _____ Seller: _____ Date: _____

Check all that apply

HIGH RISK WORK	TEMP CONNECTIONS	HAZARDS
Energized Work ≥ 50 Volts	Water	Fall Potential
Elevated Work $\geq 6'$	Electrical Power	Pinch Points
Excavation $\geq 5'$	Sewer	Electrical Shock
Dig $\leq 3'$ of utility w/ haz energy	Ventilation Ducts	Arc Flash/Blast
Confined Space Entry	Gas Lines	Housekeeping
Diving Operations		Slip/Trip
Blasting	PPE	Thermal Burns
Bldg Demolition/Renovation	Hard Hat	Manual Lifting
Welding	Safety Toe Shoes	Sharp Objects
Lasers	Safety Glasses	Rotating Equipment
Complex Lifting & Handling	Work Gloves	Congestion
Stored Energy	Hearing Protection	Struck by
IDLH	Chemical Gloves	Heat/Cold Stress
Temp Bldg Support	Dielectric Gloves	Airborne Particles
	Foot Guards	Vapors/Fumes
	Rubber Boots	High Winds
PERMITS		
Respirator	Welding Hood	Inclement Weather
Beryllium	Burning Goggles	Noise
Confined Space	Face Shield	Inhalation
Excavation	Splash Goggles	Chemical Burn
Penetration	Slicker Suit	Skin/Eye Irritant
Energized Work	Respirator	
Asbestos Abatement	DbI. Hearing Protection	EMERGENCY EQUIPMENT
Hot Work	Fall Protection	Fire Extinguisher
	Supplied Air	Safety Shower
		Eyewash
PLANS/PROCEDURES		
LOTO	SPECIFIC PERSONNEL	First Aid Kit
Dewatering	Spotter	Radio
Silica	Confined Space	Landline
	Fire Watch	Cell Phone
MAJOR EQUIPMENT	Traffic Flagger	Emergency Egress Route
Aux. Lighting	Qualified Electrical Worker	
Man Lift	Qualified Operator	
Personnel Basket	First Aid/CPR Trained	
Forklift	Competent Person	
Crane	Crane Operator	
Chain Fall	Signal Person	
Excavator/Front End Loader	Rigger Person	
Trucks/Tractors		

CONCURRENCE RECORD SHEET:

Document No. _____

FAC-612-12-0028

ADSARS Yes

No

***NTK AND KEY WORDS ARE MANDATORY FOR ADSARS DOCUMENTS AND ARE TO BE COMPLETED BY MANAGER OR AUTHOR**
NTK Site – Category

Key Words: (i.e., Doc. Type, Plant, Core, Product, etc): _____

NR Program: _____

LSN Key Words: _____

Licensing Support Network (LSN) Related: **(APPLIES TO YUCCA MOUNTAIN WORK)**

Yes

No

Check the one(s) that applies

LSN - Relevant

LSN - Segregate and Retain

Retain for Waste Acceptance

LSN - Not Relevant

Check here if this document invokes a legal privilege

RELATED SUBJECTS (Check only those that apply)

Subject	
<input type="checkbox"/>	Design Basis Information
<input type="checkbox"/>	NR Commitments Made
<input type="checkbox"/>	NR Commitment Completed
<input type="checkbox"/>	Bettis/BPMI Input Required
<input type="checkbox"/>	Equipment Change(s) Required or Potentially Required
<input type="checkbox"/>	Were Lessons Learned, Design Notes, etc. reviewed
<input type="checkbox"/>	Previous NR Comments Resolved

Subject	
<input type="checkbox"/>	Prior NR Program Experience Discussed
<input type="checkbox"/>	Drawing Change(s) Required
<input type="checkbox"/>	Manual Change Required
<input type="checkbox"/>	Reactor Safety Review Applicable
<input type="checkbox"/>	ROSC, RDSC, NFSC, etc. Reviews
<input type="checkbox"/>	Design Reviews
<input type="checkbox"/>	Other

DESIGN CHECKS:

a. Check by comparison with previous results	h. Comparison with results from other groups	n. Review of design consideration
b. Hand calculation of selected points	i. Brief review that no major discrepancies exist	o. Review of assumptions used
c. Check of computer output for selected problem	j. Check by calculation using different methods	p. Final results appear consistent
d. Check of computer input for selected problems	k. Complete audit by reviewer	q. No check considered necessary
e. Independent computer calculation	l. Review of data with author to determine adequacy of methods and results	r. Walkthrough of procedure
f. Separate audit by assigned engineer	m. Review changes from last time	s. Certification status of computer codes
g. Comparison with experimental results		t. Other

Type of check	Classification Check	Peer Check 1	Peer Check 2	Managerial Check (if applicable)
Signature		N/A	N/A	
Name	David Battiste			David Battiste
Date	15 October, 2012			15 October, 2012
Design Check(s)				
Comments				

Type of check	Managerial Check (if applicable)	Managerial Check (if applicable)	Author Final Check	Admin Review
Signature	N/A	N/A		
Name			Bruce W. Schell	Lisa M. Budesheim
Date			October 15, 2012	October 15, 2012
Design Check(s)				
Comments				

