

S-12

**REVISION 24
Dated 01/10**

**ENVIRONMENT, SAFETY AND HEALTH REQUIREMENTS
FOR SUBCONTRACTOR WORK
AT THE
KNOLLS ATOMIC POWER LABORATORY**

TABLE OF CONTENTS

| PART | | PAGES |
|-------------|---|---|
| I. | GENERAL REQUIREMENTS | 2-11 |
| II. | PRE-WORK REQUIREMENTS | 12-23 |
| III. | DURING WORK REQUIREMENTS..... | 24-32 |
| IV. | LIST OF APPLICABLE MANDATORY STANDARDS | 33-34 |
| V. | SUBMITTALS REQUIRED BY S-12 | 35-39 |
| VI. | EXHIBITS | 40 |
| | Exhibit 1 | OSHA Form 300 and Instructions |
| | Exhibit 2 | US DOE Form 5484.3 |
| | Exhibit 3 | RESERVED |
| | Exhibit 4 | Poster of Worker Protection for DOE Contractor Employees Management System Reporting Form |
| | Exhibit 5 | Materials to be used on Site; Usage, Handling and 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 Pre Job Briefing Form |
| | 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 | Pre-Lift Checklist |
| | Exhibit 13 | Identification of Current Subcontractor Employees with Beryllium-Exposure History |
| | Exhibit 14 | Energized Electrical Work Plan |
| | Exhibit 15 | Elevated Work Plan |
| | Exhibit 16 | Excavation Plan |
| | Exhibit 17 | Major Equipment Declaration |
| | Exhibit 18 | Hazard Analysis Plan |
| | Exhibit 19 | KSO Prototype Plant and OSHA Tagout Systems Equivalency |
| | Exhibit 20 | Hot Work Permit |
| | Exhibit 21 | Respirator Permit |
| | Exhibit 22 | Confined Space Entry Permit |
| | Exhibit 23 | KAPL Excavation Permit |
| | Exhibit 24 | KAPL Penetration Permit |
| | Exhibit 25 | Asbestos Work Permit |
| | Exhibit 26 | KAPL Beryllium Work Permit |
| | Exhibit 27 | Procedure Template |
| | Exhibit 28 | Disposal/Recycling Facility Acceptance Form |
| | Exhibit 29 | Typical Elements Required for a Rigging Sketch |
| | Exhibit 30 | Non Permit Confined Space Entry Form |

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 KAPL, Government Prime Contractor awarding the purchase order or subcontract, and it applies to all work to be performed at Knolls Atomic Power Laboratory's 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: A 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 will be designated as the full-time point of contact with the Buyer for all ESH concerns. See Part II, Section J for further details on OSSR.

PART I: GENERAL REQUIREMENTS

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. 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 must 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 site.
- B.3. 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. 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.4. 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 the 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).

C. BUYER'S SITE INDOCTRINATION

All Seller personnel performing work on Buyer's sites are required to attend an indoctrination session lasting approximately 30 minutes. Excluded from the term "work" are drivers making deliveries or picking up material and escorted Seller personnel providing training classes or attending meetings. This session consists of a video presentation to familiarize personnel with Buyer emergency procedures, basic radiological control, security information, safety compliance requirements and substance abuse policy. Seller personnel shall sign an attendance log and will receive a card that they must carry at all times when working at the Buyer's sites. The indoctrination shall be valid for a period of one year.

D. OCCUPATIONAL INJURIES AND OTHER EMERGENCIES

- D.1 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 drill.
- D.2 All occupational injuries occurring on Buyer's property must 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.

PART I: GENERAL REQUIREMENTS

E. HIGH RISK WORK

E.1. High risk work 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 processes are employed.

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)
- Confined Space Entry
- Diving Operations
- Blasting
- Building Demolition & Renovation
- Applicable Welding/Burning Operations
- Use of Lasers
- Complex Lifting and Handling Operations
- Work on Stored High-Energy Systems
- Use of Temporary Building Support System(s)
- Entry into potentially immediately dangerous to life or health atmospheres (IDLH)
- Other work deemed by the Buyer to require High Risk work authorization

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

E.2 It is the Buyer's policy that performance of high risk work will 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, or apply engineered and/or administrative controls to minimize the risk, and/or to use Personnel Protective Equipment (PPE) to minimize the risk. To this end, the Seller shall obtain Buyer authorization to begin the planning for Seller intended high risk work by completing Parts I & II of EXHIBIT 6A (High Risk Work Authorization Form).

E.3 Hazard Analysis Plans

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 PPE) 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 (i.e., engineering controls, administrative controls, and PPE) 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.

PART I: GENERAL REQUIREMENTS

E. HIGH RISK WORK (Continued)

E.3 Hazard Analysis Plans (Continued)

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

The Seller's OSSR shall prepare the Hazard Analysis Plans and shall sign the plans as having reviewed them prior to commencement of the affected work. Hazard Analysis Plans 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.

E.4 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 Pre Job Briefing Form). The Seller's OSSR or competent person shall be present at the worksite and shall provide full-time overview of all high risk work evolutions.

F. INSPECTION ASSISTANCE

Seller shall provide such assistance and information as may be required by the Buyer to aid in the performance of periodic ESH inspections of Seller work operations, facilities and equipment.

G. UNPLANNED EVENTS

A formal inquiry process known as a Critique or fact finding meeting will be conducted by the Buyer to determine 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. The operation and equipment used which caused the occurrence may be suspended, and the scene shall be preserved until released by the Buyer. The critique will be held as soon as practicable following the occurrence, as determined by the Buyer.

H. WEEKLY INSPECTIONS

Unless otherwise stated in the subcontract, Sellers shall perform weekly inspections of their work operations, facilities and equipment to assure compliance with the requirements of this specification and all applicable Federal, State and local regulations. Documentation shall be maintained for all inspections/findings. The Seller shall provide inspection/finding records to the Buyer for review, upon request.

PART I: GENERAL REQUIREMENTS

H. WEEKLY INSPECTIONS (Continued)

All Sellers performing on site work shall instruct their employees to: (a) observe the applicable occupational safety, health and environmental standards prescribed herein; (b) report promptly to Seller 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.

I. PERSONAL PROTECTIVE EQUIPMENT

- I.1 Head and eye protection meeting the requirements of ANSI Z87.1 or CSA Z94.3 shall be worn at all times in posted construction areas, unless otherwise approved by the Buyer.
- I.2 All personnel performing lifting and handling operations with crane equipment (including chain hoists and come-a-longs) shall wear safety glasses, hard hats, and substantial foot wear. In addition, gloves made of appropriate material and function shall be worn by personnel performing lifting and handling operations with crane equipment except when operating crane controls.

J. EXPOSURE STANDARDS AND EVALUATIONS

- J.1 The Seller's personnel exposure to toxic substances or harmful physical agents shall not exceed: (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), whichever is lower. 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 PPE (e.g., respiratory protection equipment) which is approved or recommended by one of the following agencies:
- National Institute of Occupational Safety and Health (NIOSH).
 - Mine Safety and Health Administration (MSHA).
- 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.
- 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, 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.

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. The Buyer will provide the Material Safety Data Sheets (MSDS's) and the Buyer will provide training and education to Seller personnel.

PART I: GENERAL REQUIREMENTS

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

M. PORTABLE STRUCTURES, TRAILERS AND LAYDOWN AREAS

- M.1 Any portable structures, including construction trailers, used on site by the Seller, must be in compliance with the applicable building and fire codes and the DOE Standard on Fire Protection for Relocatable Structures, DOE-STD-1088-95.
- M.2 Seller shall identify for approval from the Buyer their space to work, accumulate materials, or locate portable structures ten (10) days in advance of their needs.

N. WASTE DISPOSAL

- N.1 The Seller shall not dispose of any materials on site (i.e., pouring onto the ground, dumping in a ditch/storm drain, throwing into a dumpster, venting or degassing) without prior approval of the Buyer.
- N.2 Solid Waste – Ordinary garbage, such as paper bags, food scraps, yard/vegetation waste, and cigarette butts, may be disposed of in the appropriate dumpsters or trashcans around the site. Recyclable materials, such as glass, plastic, paper, cardboard, and tin cans, shall be placed in the appropriate collection containers located around the site. Compliance with the Buyer's recycling program is mandatory.
- N.3 Scrap Metal – Scrap metal shall be placed in Buyer provided scrap metal dumpsters, unless otherwise directed by the Buyer in the technical specification. 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 must 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 dumpster. Material is to be placed in dumpsters only upon the approval of the Buyer.
- N.4 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 construction and demolition (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.

PART I: GENERAL REQUIREMENTS

N. WASTE DISPOSAL (Continued)

N.5 Construction and Demolition Debris – Unless otherwise specified in the contract technical specification, 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. The Seller shall provide to the Buyer copies of relevant permits (e.g., the transporter's permit and the local disposal facility permit) and any written agreements with ultimate disposal facilities prior to removal of C&D waste from site. The Seller shall report monthly (within 5 work days from the end of the month) to the Buyer the number of cubic yards and tonnage of C&D debris removed from the site.

N.6 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 contract technical specification and/or the Buyer approved Seller prepared Waste Process Evaluation List (EXHIBIT 11).

N.7 Non-hazardous Chemical and Hazardous Chemical Waste

N.7.1 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 etc.), hazardous and non-hazardous, generated as a result of work under the contract. If the waste is generated by a Seller working outside the contract specifications, or using materials or methods not approved by the Buyer on the Seller Waste Process Evaluation List (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.7.2 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 take duplicate samples.

N.8 Characterization

N.8.1 Waste shall be placed in areas designated by the Buyer.

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 (FCE).

N.8.2 Chemical waste must be stored/package in compatible containers and labeled appropriately. Hazardous and non-hazardous waste storage areas must be pre-approved by the Buyer. The Seller shall provide manpower to package and label waste, and to place the waste in areas designated by the Buyer.

N.9 Recyclable Material – The Seller shall report monthly (within 5 work days of the end of the month) to the Buyer the number of cubic yards and tonnage of recyclable material removed from the site.

PART I: GENERAL REQUIREMENTS

N. WASTE DISPOSAL (Continued)

N.10 Ionization Type Smoke Detectors and Smoke Alarms

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

At KSO, ionization type smoke detectors and smoke alarms are to be handled in accordance with the requirements of NAVSEA 389-0288, Article 702.2.g. and KSO IP SOG #40. All ionizing smoke detectors and smoke alarms 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 NAVSEA 389-0288, Article 703 or Article 710 must be made. Ionization detectors removed from service by other than KSO's licensed fire alarm system contractor shall be immediately turned over to Site Radiological Controls personnel, and be controlled as radioactive material per NAVSEA 389-0288 Article 702.2.g 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 licensed KSO 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.

O. TEMPORARY CONNECTIONS

- O.1 The Seller request shall specify the purpose, duration and any controls on the connection for approval at least five (5) days prior to the planned connection.
- O.2 Temporary connections to existing Buyer services, (such as water, electrical power, sewers, ventilation ducts, gas lines, etc.) must be authorized by the contract technical specification.
- 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).

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.

PART I: GENERAL REQUIREMENTS

P. SITE DRAINAGE SYSTEM (Continued)

- 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. (Also see Part II, Section M.3 for excavation dewatering requirements.) 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 Storm Water Permit for Municipal Separate Storm Sewer Systems (MS4). The Seller shall implement the necessary control measures established in the contract documents and specifications 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.
- 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.

Q. SPILLS/RELEASES

- Q.1 The Seller shall immediately (**within five (5) minutes**) notify the Buyer verbally or by telephone extension 116 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 Representative. The Seller shall provide waste generated from the cleanup actions to the Buyer for disposal. The Buyer will 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.

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 recirculating type and return the exhausted air into the room. All such systems will require the prior approval of the Buyer.

PART I: GENERAL REQUIREMENTS

R. AIR EMISSIONS (Continued)

- 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.
- 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.

S. BERYLLIUM CONTROL

- 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 must 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 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 must 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.

- S.3 KAPL Specific Requirements – See EXHIBIT 26

T. PETROLEUM TRANSFER OPERATIONS

- T.1 Petroleum transfer operations are required to have an appropriate secondary containment, as appropriate, per site procedures.
- T.2 The Seller will submit fuel transfer operation procedures for their fuel trucks or equipment.

END OF PART I

PART II: PRE-WORK REQUIREMENTS

A. SELLER SAFETY PROGRAM

For all construction contracts, unless otherwise noted in the bid requirements, the Seller shall submit the company's written safety program to the Buyer for information. 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. When 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.

B. WORK ADMINISTRATOR / SUBCONTRACTOR TECHNICAL REPRESENTATIVE COORDINATION

The Buyer's representative is responsible for day-to-day oversight and coordination of Seller operations. As such, the prime Seller shall inform the Buyer's Representative when Seller personnel are on site. The Seller and Buyer must 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" (refer to definition in Section I.A).

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 & 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** before any of the following operations are performed. The Seller shall return the completed documents to the Buyer upon completion of work.

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 22 / 30
- 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

D.3 Under certain circumstances additional documentation in the form of a specific Work Plan is required. The work may be high risk work and Buyer authorization (EXHIBIT 6A) is required prior to beginning to plan the execution (see Part I, Section E). 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

PART II: PRE-WORK REQUIREMENTS

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 measurements (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 experience with procedures (if any), training, respiratory protective measures and workplace measurements 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 must be accompanied by the relevant MSDS. For any material not on the KAPL 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 performance of this contract. In addition, the Seller shall submit for approval an Exhibit 5 for all metal products used on site in 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 Material Safety Data Sheet (MSDS) appropriate to the material being used (i.e., manufacturer, formulation, and date of manufacture) must be attached to 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.

Notes:

(1) A copy of the KAPL List of Exempt Products (LEP) can be found electronically in the general SharePoint area or a hardcopy can be obtained from the KAPL STR.

(2) Use of a prior Buyer approved Exhibit 5 is permitted in accordance with the KAPL prepared section the "Does future use of this material require approval". Exhibit 5 with "no" designations checked for all disciplines 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

F. MATERIAL SAFETY DATA SHEETS (Continued)

F.1 (Continued)

All Exhibits 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.

The Seller shall be responsible for the requirements detailed in 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.2 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.

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 must 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:

- Installation of a spray booth where a paint spray gun is to be used by the Seller.
- 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. Seller shall provide the horsepower rating and operating duration for all generators to be brought on site for the work evolution.

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

I.1 To comply with DOE requirements, all Sellers must 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 posted in various locations at each site.

PART II: PRE-WORK REQUIREMENTS

I. EMPLOYEE SAFETY OR HEALTH CONCERNS (Continued)

- I.2 DOE Occupational Safety and Health Protection Policy requires that Sellers furnish Seller employees employment and a place of employment which is free from occupational hazards. As a minimum, Sellers shall inform their employees and lower tiers that they:
- 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 prescribed Buyer's 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.
 - 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, the Sellers are encouraged to report employee concerns to the Buyer's Representative first.
- I.3 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.
- I.4 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. ON SITE SAFETY REPRESENTATIVE (OSSR)

- J.1 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 is made at the time of subcontract preparation and is specified as a subcontract deliverable 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.2 The Seller should consider an individual with knowledge of EHS regulatory requirements and ESH Management Systems when designating the OSSR. This individual should also possess leadership, guidance, and authority skills.

PART II: PRE-WORK REQUIREMENTS

J. ON SITE SAFETY REPRESENTATIVE - OSSR (Continued)

- J.3 The OSSR's responsibilities, as a minimum, include:
- Be the Buyers 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 High Risk Work, and Hazard Analysis Plan(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.4 The Seller is required to designate at least one OSSR who must be 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.
- J.5 The OSSR must be on site whenever any work is being performed.

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.3 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 high risk work (See Part I, Section E) and Buyer authorization is required prior to beginning to plan the work (EXHIBIT 6A). Additionally, the Seller is required to submit to the Buyer, for approval, an Energized Electrical Work Plan (EXHIBIT 14) prior to performance of work on, or work near, energized electrical equipment.
- K.2 The Seller shall provide written verification to the Buyer stating that all Seller personnel who perform electrical work have received required training and are qualified and authorized to do the work assigned prior to those personnel performing the work. The written verification shall include, as a minimum, the name of the Seller personnel trained, the date(s) of the training, and signature of the person who conducted the training or the signature of the Seller. The training, as a minimum, shall include the following:
- K.2.1 Training (classroom or on-the-job): The degree of training provided shall correspond to the risk to Seller personnel as determined by the Seller. As applicable to the worker's job, this training shall include:
- a. Skills and techniques necessary to distinguish exposed live parts (and their voltage) from other parts of electric equipment and determine the nominal voltage of the exposed live parts.
 - b. Minimum approach distances from overhead lines (Table S-5 29 CFR 1910.333) and the corresponding voltages to which the qualified person will be exposed.
 - c. The safety-related work practices of 29 CFR1910.331 - .335

PART II: PRE-WORK REQUIREMENTS

K. ELECTRICAL SAFETY (Continued)

K.2 (Continued)

K.2.2. If work on, or work near, energized equipment or systems involves either direct or indirect contact or contact by means of tools or materials, training must include the following:

- a. safe work practices for working on energized circuits;
- b. PPE; and
- c. insulating and shielding materials and insulated tools.

K.3 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.

K.4 Seller personnel performing work on or near power transmission/distribution equipment or lines must receive additional training as specified in 29 CFR 1910.269.

K.5 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 must be protected by line hose or other voltage-rated supplementary barriers.

K.6 Prior to using any insulated aerial lift for electrical work, the Seller shall demonstrate to KAPL 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

L.1 The Seller shall notify the Buyer **five (5) days** prior to bringing mechanized equipment that will be used for making lifts on site (e.g., mobile cranes, fork trucks, pole trucks, drill rigs, earth moving equipment, etc.). A lift is defined as the elevation of a load or equipment attached using slings, chain, hooks, forks, etc. For example, using a track-hoe bucket to lift dirt is not a lift, but attaching a chain sling to the bucket to remove a pipe from a hole is.

L.2 All mechanized equipment that will be used for making lifts shall be inspected daily by the Seller, shall meet the applicable OSHA, ASME, or other applicable regulatory requirements, and shall be maintained in accordance with the manufacturer's recommendations. Equipment that appears to the Buyer to be deficient will not be allowed to be used on site until the deficiency is corrected.

L.3 Mobile cranes shall have protection against two-blocking.

PART II: PRE-WORK REQUIREMENTS

L. LIFTING & HANDLING (Continued)

L.4 Equipment General Safety Devices

All safety devices (e.g., limit switches, interlocks, bells, horns, warning lights, emergency stops, bumpers, etc.) shall be operable and safe for use. Safety devices shall not be bypassed, repositioned, overridden, or rendered inoperative.

L.5 Overloading

In order to preclude overloading of equipment used for making lifts a method of load indication shall be used for applications where overloading is possible, (i.e., where loads are not fully free to move, are not of known weight, or where a binding condition is possible).

L.6 Hooks

All hooks shall be moused or safety latched if required by design unless otherwise approved by the Buyer.

L.7 Pre-lift Checklist

Unless otherwise approved by the Buyer, the Seller shall complete a Pre-lift Checklist (EXHIBIT 12) prior to each lift. Upon completion of the lift (or the end of the workday), the form(s) shall be turned over to the Buyer.

L.8 Complex Lifts

Complex Lifts are defined as high risk work that requires Buyer authorization (EXHIBIT 6A) prior to beginning to plan the work. In addition this work requires rigging sketches. (Refer to EXHIBIT 29 for Typical Elements Required for a Rigging Sketch.) These lifts include:

- Hazardous materials (e.g., explosives, highly volatile substances, etc.) This does not include 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 transporting by cranes.
- Large and complex geometric shapes (in general, these are items that do not have pre-engineered lifting attachment points or an easily defined center of gravity).
- Lifts exceeding 80 percent of the certified capacity of the crane's hoist (e.g., main hoist, whip hoist) planned for use.
- 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 (e.g., in the vicinity of overhead transmission lines, rotating loads from horizontal to vertical, etc.).

PART II: PRE-WORK REQUIREMENTS

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" 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 high risk work and requires Buyer authorization (EXHIBIT 6A) prior to beginning the permit process and to plan the work. 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 and any shoring system used which also requires certification by a registered professional engineer (PE) or competent person.

- M.2 Sloping greater than 1:1-1/2 (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, the dewatering procedure for treatment of the water prior to discharge shall be provided to Buyer for approval prior to use. The Buyer's Representative will coordinate Buyer approval. Dewatering must 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. Further details regarding dewatering and storm water/ground water control are outlined in Part I, Section P of this document.

N. PENETRATIONS

Any boring, drilling, or alteration of walls, floors or ceiling of structures (i.e. "a penetration") requires a Penetration Permit (EXHIBIT 24) which shall be requested in advance of such operations. For penetrations during 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.

O. POWDER or BUTANE ACTUATED DEVICES

The Seller shall notify the Buyer at least ten (10) days in advance of bringing any powder or butane actuated devices on site. Operators of these powder actuated devices are required to have in their possession a qualification card, which indicates proper training. Powder or butane actuated devices and their associated loads shall be controlled at all times and locked up when not in use.

PART II: PRE-WORK REQUIREMENTS

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

Materials listed below require the specific approval of Safety Engineering, Industrial Hygiene, Mixed and Hazardous Waste Engineering, and Environmental Operations/Engineering for on site usage. Use of RUMs on site should be minimized.

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

Q. CONFINED SPACE WORK

The Seller shall obtain a Confined Space Entry Permit (EXHIBIT 22) or a Non Permit Confined Space Entry Form (EXHIBIT 30) from the Buyer prior to entering any space defined as a permit-required confined space or a non-permit required confined space, respectively. Confined spaces shall include areas such as tanks, vessels, reactor compartments, double bottom tanks, underground tanks, fresh water drain collecting tanks, sewers, boilers, pits, vents, and drains.

R. RESPIRATORY PROTECTION

R.1 In addition to completion of a Respirator Permit (EXHIBIT 21), the Seller shall provide the Buyer with a list of persons trained, the type (e.g., air purifying, SCBA, PAPR, etc.) make, and model of respirator(s) trained on, and the date of training. Training shall be conducted every 12 months.

PART II: PRE-WORK REQUIREMENTS

R. RESPIRATORY PROTECTION (Continued)

- R.2 The Seller shall be responsible for quantitative fitting (fit testing) of personnel who will use a respirator with a tight-fitting face piece. A fit factor of 300 for half-face piece respirators and 1500 for full face piece respirators shall be obtained. The Seller shall provide the Buyer with a list of persons fitted, the type, make, and model of respirator(s) fitted, test results, fit factor, and test date. Respirator fitting shall be conducted at least every 12 months.
- R.3 The Seller shall provide a medical evaluation to determine the employee's ability to use a respirator in accordance with OSHA 29 CFR 1910.134. The Seller shall provide the Buyer with a written recommendation from the Physician or Other Licensed Health Care Professional (PLHCP) regarding the employee's ability to use the respirator.
- R.4 The Seller respiratory protection program shall be in accordance with OSHA 29 CFR 1910.134. A copy of the program shall be provided to the Buyer for information.
- R.5 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.

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.

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. Procedures for the use of Class 3A, 3B and 4 lasers 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. PAINTS (COATINGS) AND METALS

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 must 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).

PART II: PRE-WORK REQUIREMENTS

V. PAINTS (COATINGS) AND METALS (Continued)

V.1 Metals (Continued)

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 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 at KAPL contain hazardous constituents such as PCBs, lead, chromium, nickel, cadmium, zinc and others. These materials must be assumed to be present unless otherwise demonstrated by the Seller (e.g., MSDS's, sampling, etc.). If hazardous constituents are identified that 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 must 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 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 with limited ventilation and/or near building fresh air intakes requires prior review and written approval from the Buyer. The Seller must request approval at least ten (10) work days in advance.

X. HEPA FILTER SYSTEMS

Ventilation units and vacuum cleaners containing high-efficiency particulate air (HEPA) filters 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.

Y. WASTE GENERATION & 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 must submit a Seller Waste Process Evaluation List (EXHIBIT 11) for Buyer approval ten (10) workdays 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

PART II: PRE-WORK REQUIREMENTS

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. Entry requirements (e.g., PPE) shall also be included on signs.
- Z.2. Impalement hazards shall be rendered safe.
- Z.3. All inclined walkways shall have cleats or abrasive surfaces and shall be kept free of debris.
- Z.4. Any modifications and/or repairs made to equipment involving safety devices or otherwise affecting safe operations must offer the same protection as original construction, and must use the manufacturers approved replacement parts. No modifications shall be made to any equipment that would affect the UL, NEMA or other required certifications.
- Z.5. All materials shall be adequately secured, as approved by the Buyer, to prevent materials from blowing about. Particular attention must be paid to elevated structures.
- Z.6. The Seller shall not perform any elevated work including work involving cranes, susceptible to windy conditions (wind speed or gusts in excess of 20 miles per hour), unless approved by the Buyer.
- Z.7. Seller personnel are required to obtain Buyer approval prior to entering, inspecting or otherwise conducting surveillance and/or work above all ceiling spaces.
- Z.8. If the Seller is required to apply pesticides in New York State, then the individual applying the pesticide must be a New York State Pesticide Applicator or Technician. The Seller must submit proof of certification prior to the start of work.
- Z.9. Any work to be done within or adjacent to known or suspected wetland environments shall be reviewed with the Buyer prior to any degree of disturbance to the area.
- Z.10 Ionization Type Smoke Detectors and Smoke Alarms
 - Z.10.1 Special attention must be paid to the handling of ionization type smoke detectors and smoke alarms containing Americium 241 at KAPL. In the event that the Seller discovers an ionization type smoke detector or smoke alarm that is not identified in the subcontract documents, the Subcontractor shall cease work and immediately (prior to removal) notify the STR; At KSO, Incident Prevention shall also be notified.
 - Z.10.2 The Seller shall not bring any ionization type smoke detector or smoke alarm onto the KAPL Site without prior notification of the STR. Ionization detectors not for use at KAPL shall not be brought on site.
 - Z.10.3 The STR will coordinate proper labeling, handling and inventory tracking of these smoke detectors as they are brought on site.
 - Z.10.4 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 and the STR is aware of the situation. The detector must be turned over to the Buyer Radiological Controls personnel for proper labeling and control if constant control of the detector can not be maintained in the immediate work area.

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 is 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) workday 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
- Subcontractor 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" must 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 must be submitted within three (3) workdays of an occupational injury/illness. For reporting property damage or motor vehicle accidents, the form must be submitted concurrent with the OSHA Form 300.

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 The Seller or their employees are not to bring vehicles or equipment with known leaks onto the Site property. 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 KSO) shall be notified immediately. The leak and/or spill must 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.3 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.4 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 (e.g., keys shall be tagged with equipment identification data and turned over to the Buyer's Representative for safekeeping).
- C.5 If Seller's vehicles or equipment is located on Buyer 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.5.1 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.5.2 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. SELLER VEHICLES (Continued)

C.6 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 must 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.

E. WINTER CONDITIONS

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

F. LOCKOUT/TAGOUT

F.1 The Seller is responsible to comply with all Lockout/Tagout (LOTO) requirements specified by 29 CFR 1910.147, 145 and 29 CFR 1910 Subpart S. 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. 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 high risk work as described in S-12 Part I, Section E. Tags must be attached using nylon cable ties, or the equivalent, having minimum release strength of fifty (50) lbs.

F.2 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. The Yellow/Black "Caution - Do Not Operate" 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.

PART III: DURING WORK REQUIREMENTS

- F.3 A red “Danger” tag shall not be used for equipment protection.
- F.4 The Seller shall provide written verification to Buyer stating that all Seller personnel who perform LOTO have received training in accordance with the requirements of 29 CFR 1910.147 and are qualified and authorized to perform the work. The written verification shall include, at a minimum, the name of the Seller personnel trained, the date(s) of the training, and signature of the person who conducted the training or the signature of the Seller.
- F.5 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.6 The Seller shall not install a LOTO on a Buyer system/equipment until the system/equipment is first LOTO by the Buyer, except when the system is completely turned over to the Seller.
- F.7 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 installed his/her LOTO.
- F.8 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.9 When the Seller job involves work on a KAPL-Kesselring Site (KSO) plant-controlled system that requires energy isolation, Plant personnel shall apply necessary tags. Buyer acknowledgement of the equivalent/alternate LOTO process for work involving KSO plant-controlled systems is addressed via Buyer generated EXHIBIT 19 and involves the OSSR and the Buyer’s Representative
- The cognizant Buyer’s Representative shall then assist in the proper placement of all tags, be the cosignatory for the repair activity on the tag out record sheet and on the tag itself during tag placement; and eventually, for clearance of tags at the completion of work. Ten (10) day advance notification is required.
- F.10 Seller’s may use a group lock out to perform LOTO of machines and equipment. When doing so, the Seller must follow a procedure for group LOTO in accordance with 29 CFR 1910.147.

PART III: DURING WORK REQUIREMENTS

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).
- 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 obtain an approved "Hot Work Permit" (EXHIBIT 20) from the Buyer's Representative prior to use of any open flame, heat or spark producing device. The permit shall be issued to cover specified operations and must be reviewed each day (or shift, if work involves more than a one shift per day).

Permits are not needed for cooking (including the use of hot plates, warming canisters, coffee pots, stoves, grills, fryers, toaster(oven), microwave oven, open flame grills (used outside), electric soldering irons, hair dryers (household type), and electric space heaters.

- 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 separate fire watch shall be provided for each area when grinding, welding, cutting, and open flame operation is occurring. In addition, multiple fire watches for the same operation shall be necessary when barriers may 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.

PART III: DURING WORK REQUIREMENTS

H. COMPRESSED GAS CYLINDERS: ON SITE USE ONLY

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.

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 Underwriter Laboratory approved.
- I.4 Ground fault circuit interrupters (GFCI's) shall be used on all receptacle outlets and temporary lighting circuits in construction areas. GFCI's must 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 high risk work and Buyer authorization (EXHIBIT 6A) is required prior to beginning to plan the work. Additionally, an Elevated Work Plan (EXHIBIT 15) and sketches, drawings or photos shall be submitted by the Seller for Buyer approval before the start of work.
- J.2 A positive means of fall protection is required whenever working within six (6) feet of 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 of an unprotected edge. An unprotected edge is one which does not have a barrier which is 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 of an unprotected edge.

PART III: DURING WORK REQUIREMENTS

J. ELEVATED WORK (Continued)

- J.4 In cases where it is not practicable to perform work in accordance with J.2 or J.3 and
- 1) Where workers would not be allowed within six (6) feet of an unprotected edge, and
 - 2) When there is no handling of equipment or operations which could draw a worker within six (6) feet of an unprotected edge, and
 - 3) When 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.
- 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 provide the Buyer with written certification of training of Seller personnel to the fall protection requirements of 29 CFR 1926, Subpart M as required by 29 CFR 1926.503. This not only includes those Seller personnel who work to Buyer approved Elevated Work Plans (Exhibit 15) but also to those Seller personnel, who in the execution of their work, may have an occasion to wear personal fall arrest equipment (i.e., work in bucket trucks, aerial lifts, extendable boom man-lifts/platforms, articulating booms, scissors lifts, aerial ladders). Additionally, the Seller shall provide in writing the names of those personnel who the company has designated as Competent and /or Qualified Persons as it relates to fall protection.

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 must be available. Any person assigned primary or stand-by responsibility for aerial lift operation shall be qualified to operate the device. The Seller shall provide written training documentation to include the employee trained, date(s) of training, type of equipment qualified to operate, and identification who conducted the training. 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.

PART III: DURING WORK REQUIREMENTS

K. AERIAL LIFTS & ELEVATING PLATFORMS (Continued)

- K.3 The Seller shall provide written verification of training for those Seller personnel who operate bucket trucks, extendable boom man-lifts/platforms, articulating booms, scissors lifts, aerial ladders.
- K.4 A secondary form of fall protection must 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 KAPL 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. LIFTING & HANDLING

- L.1 All mechanized equipment and associated rigging components that will be used for making lifts, shall be inspected daily by the Seller, shall meet the applicable OSHA, ASME, or other applicable regulatory requirements, and shall be maintained in accordance with the manufacturer's recommendations. Equipment that appears to the Buyer to be deficient will not be allowed to be used on site until the deficiency is corrected. A pre-lift checklist must be completed for all lifts. Pre-lift checklist is provided in Exhibit 12.
- L.2 When working in the vicinity of suspended loads, minimize the number of personnel close to the load (i.e., the number of personnel should be limited to those essential to guiding the load into place. Those essential personnel **may** place their hands **on** the load provided (1) there is no risk of being struck by/crushed by (caught between) the load if it were to lower and/or swing unexpectedly, and (2) they will not become off balance while reaching for the load.

Normally, personnel **shall not** reach under or place any portion of the body under an **unblocked** suspended load. If personnel need to reach under a suspended load, **block it** whenever possible. If blocking the load is not possible, personnel may only reach under suspended loads for a short duration (e.g., to install or remove coverings, make attachments, position supports, etc.) provided the load is static and stationary, not over the employee's head, and the only body parts under the load are the arms up to the elbows. In these cases the following also applies:

- (1) If the particular task is to be performed on a **predictable and/or regular basis**, the evolution shall be evaluated and must be authorized in a formal work document or procedure that has been approved via the High Risk Work authorization process.
- (2) If the evolution is **in progress** and emergent reaching under the suspended load becomes necessary to establish a safe load condition, the cognizant supervisor must evaluate the risk and can authorize personnel to reach under the suspended load.

NOTE: STEEL ERECTION MAY BE EXEMPTED FROM THE ABOVE REQUIREMENTS BY AND IN ACCORDANCE WITH OSHA 1926.753(D)."

PART III: DURING WORK REQUIREMENTS

M. WORK REVIEW / WORK AUTHORIZATION

All work to be performed by the Seller will be reviewed and released in accordance with the Work Authorization 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 one hour for these specific work reviews.

END OF PART III

PART IV: LIST OF APPLICABLE MANDATORY STANDARDS

All applicable laws and regulations promulgated under these laws MUST 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) 6 NYCRR Part 205, Architectural and Industrial Maintenance (AIM) Coatings
- (17) Clean Water Act (CWA)
- (18) NYSDEC Regulations

In addition, the mandatory standards listed below are a matter of DOE policy for which 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) National Building Code and the companion 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) ASME B.31, Piping Code
 - (d) ASME, "Boiler and Pressure Vessel Safety Code"
 - (e) Title 29 CFR 1910, "Occupational Safety and Health Standards (OSHA)
 - (f) Compressed Gas Association (CGA), Pamphlets P-1 and P-12
 - (g) US Army Corps of Engineers Manual, EM 385-1-1

PART IV: LIST OF APPLICABLE MANDATORY STANDARDS

D. Occupational Safety (Continued)

- (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 V: SUBMITTALS 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.

| SECTION | CIRCUMSTANCE | REQUIRED DOCUMENTATION | WHEN REQUIRED |
|----------------|---|---|--|
| GENERAL | | | |
| I.B.2 | When a Subcontractor'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.B.3 | When the Subcontractor'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.E.2 | High Risk Work | Documentation packages (e.g., Plans, Authorizations, & Work Procedures, Briefing Sheets, Permits - EXHIBITS 6A & 6B) | Prior to performing the work. |
| I.E.3 | Each project | <u>Project specific</u> Hazard Analysis Plan (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. |
| | Subcontractor operations involving high risk work (energized electrical work, elevated work, excavations, confined spaces, diving operations, blasting, building demolition, welding/burning operations, use of lasers, crane operations, etc.) or unusual hazards. | <u>Task specific</u> Hazard Analysis Plan (HAP) which identifies each work evolution associated with the high risk work task, all foreseeable hazards and any planned protective measures to mitigate those hazards (EXHIBIT 18). | Ten (10) workdays in advance of the expected need. |
| I.H | Weekly Inspections | Documentation of weekly inspections of the Subcontractor'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. |
| I.M.2 | Subcontractor 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) workdays in advance of the expected need. |
| I.N.5 | Generation of construction and demolition (C&D) debris during work. | Written letter stating name and address of the disposal location, copy of agreement between disposal location and Subcontractor and copy of the transporter and disposal location's permit. (EXHIBIT 28) | Prior to start of work |

PART V: SUBMITTALS REQUIRED BY S-12

| SECTION | CIRCUMSTANCE | REQUIRED DOCUMENTATION | WHEN REQUIRED |
|-----------------|--|--|---|
| I.N.5 | Generation of construction and demolition (C&D) debris during work. | Report quantity of C&D debris removed from site each month | Monthly, within five (5) workdays from the end of the calendar month. |
| I.N.6 | Other controlled waste | Waste Process Evaluation List (EXHIBIT 11) | Prior to generation |
| I.N.9 | Generation of recyclable material during work. | Report quantity of recyclable material removed from site each month | Within five (5) workdays from the end of each month. |
| I.O.1 | Temporary connection to KAPL services (water lines, sewers, ventilation ducts etc.). | Written work procedure specifying purpose and duration of connection and any controls on the connection. | Five (5) 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) working days prior to starting any soil-disturbing activity |
| I.R.4 | Work on refrigerant systems. | Copy of technician's license. | Ten (10) working days prior to start of work. |
| I.S.2 | All work at KAPL sites where Subcontractor employees report they were, or believe they may have been, exposed to airborne beryllium at KAPL 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.2 | Petroleum Transfer Operation | Submit Petroleum Transfer Operation Procedure, for approval | Ten (10) days prior to performance of the transfer. |
| PRE-WORK | | | |
| II.A | All construction subcontracts, unless specifically excluded in the bid specification. | Written safety program to Buyer, for information. | At time of proposal |
| II.C | Use of major equipment. | Major Equipment Declaration form (EXHIBIT 17) for each piece of major equipment. | Ten (10) workdays before use of equipment |

PART V: SUBMITTALS REQUIRED BY S-12

| SECTION | CIRCUMSTANCE | REQUIRED DOCUMENTATION | WHEN REQUIRED |
|------------|--|---|--|
| II.D | <p>Any of the permit processes listed below:</p> <ul style="list-style-type: none"> - Hot Work, use of flame, heat producing or spark producing device - Use of respirator - Permit-required Confined Space - Excavation - Penetration - Asbestos removal/disposal/handling - Energized electrical work - Elevated work - Work in beryllium restricted-access areas | <p>Request & obtain the required internal permit/plan applicable to the specific process.</p> <p>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.</p> | Ten (10) workdays before start of work evolution. |
| II.E | <p>Work with hazardous materials or physical agents that requires any of the following:</p> <ul style="list-style-type: none"> - Engineering controls - Respiratory protective equipment - Workplace exposure measurements <p>Examples include work such as cutting, or grinding operations on concrete, painted surfaces or metal surfaces.</p> | <p>Procedure (EXHIBIT 27) describing:</p> <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) workdays 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 Subcontractor operation that may require a State or Federal permit. | Information required by to support permit application. | During bid process. |
| II.J.4 | Designate an On Site Safety Representative (OSSR). | Proposal/Nomination/list on Seller's company letterhead. | During bid process. |
| II.K.1 | Work on energized systems. | Energized Electrical Work Plan (Exhibit 14) | Ten (10) work days prior to the start of work. |
| II.K.2 | Performance of electrical work or the performance of work on, or work near, energized electrical equipment. | Annual written verification of training | Five (5) workdays before start of electrical work. |
| II.L.1 | Use of equipment for making lifts on site. | Notify the Buyer's Representative. | Five (5) workdays before bringing on site. |
| II.L.7 | Use of equipment for making lifts | Complete Pre-lift Checklist – EXHIBIT 12 | Prior to each lift |
| II.L.8 | Complex Lifts | Rigging sketch (see EXHIBIT 29) | Five (5) workdays before use. |
| II.M.1 | Any excavation >12" in depth. | Plan to address compliance with 29 CFR 1926 Subpart P (Excavation Permit - EXHIBIT 23). | Ten (10) workdays prior to beginning excavation work. |

PART V: SUBMITTALS REQUIRED BY S-12

| SECTION | CIRCUMSTANCE | REQUIRED DOCUMENTATION | WHEN REQUIRED |
|-------------|--|---|---|
| | Any excavation >5' in depth where personnel must enter. | Excavation Plan (EXHIBIT 16) signed by professional engineer or competent person. | Ten (10) workdays 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) workdays 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. |
| II.N | Penetrations in walls, floors and ceilings. | Notification of the Buyer's Representative and a Penetration Permit (EXHIBIT 24). | Ten (10) workdays prior to beginning work. |
| II.O | Use of powder-actuated devices. | Notify Buyer's Representative - Operator shall carry card indicating ANSI A10.3 training. | Ten (10) working days prior to bringing on site. |
| II.Q | Confined Space Entry | Confined Space Entry Permit (EXHIBIT 22) or Non Permit Confined Space Entry Form (EXHIBIT 30) | Ten (10) workdays before planned entry. |
| II.R.1 -R.4 | 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) workdays before start of work. |
| II.R.5 | 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.S | Work involving asbestos containing materials. | Provide asbestos work submittals required by EXHIBIT 10. | Ten (10) work 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) work days before start of work. |
| II.U | Use of Lasers – Class 3A, Class 3B, or Class 4 | Written procedure (EXHIBIT 27) for Buyer approval (procedure to demonstrate compliance with ANSI Z-136.1. | Ten (10) workdays 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 | Ten (10) work days before start of work. |
| II.Y | Generation of waste as part of scope of work. | Seller Waste Process Evaluation List which lists, for each waste stream: (EXHIBIT 11) <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) work days prior to start of work. |
| II.Z.8 | Application of pesticides. | Proof of NY State license. | Prior to application. |

PART V: SUBMITTALS REQUIRED BY S-12

| DURING WORK | | | |
|--------------------|--|--|--|
| III.A.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.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) day of occurrence. |
| 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.F.4 | Perform lockout/tagout. | Written verification of training. | Prior to the start of work involving lockout/tagout |
| III.F.9 | Lockout / Tagout Procedure at KSO | Completion of EXHIBIT 19 – work on KSO Plant controlled system requiring energy isolation. | Ten (10) workdays 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.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 Plan (EXHIBIT 15). | Ten (10) workdays before start of work. |
| III.J.11 | Use of Fall Protection Equipment | Written certification of training of Seller personnel to the fall protection requirements of 29 CFR 1926, Subpart M as required by 29 CFR 1926.503(b). Also the names of Seller designated Competent and/or Qualified Person(s). | Submit with the first elevated work plan or prior to performing elevated work. |
| III.K.1 | Use of Aerial Lift / Elevating Platforms. | Written training documentation to include the employee trained, date(s) of training, type of equipment qualified to operate, and identification who conducted the training. | Prior to the start of Aerial Lift/Elevating Work Platform work. |
| III.L | Lifting and handling equipment. | Inspected daily and in accordance with EXHIBIT 12. | Prior to use. |

END OF PART V

PART VI: EXHIBITS REQUIRED BY S-12

KAPL EXHIBITS LISTING

- 1 OSHA Form 300 & Instruction
- 2 US DOE Form 5484.3
- 3 RESERVED
- 4 Poster of Worker Protection for DOE Contractor Employees Management System Reporting Form
- 5 Materials to be used on Site; Usage, Handling & Disposal Approval
- 5I Materials to be used on Site; Instructions
- 6 High Risk Work
- 6A High Risk Work Authorization Form
- 6B High Risk Pre Job Briefing Form
- 7 Clearances from Overhead Power Lines for Cranes, Backhoes, Un-Insulated Aerial Lifts Used by Qualified or Unqualified Operators, Scaffolds, & Similar Equipment
- 8 Distances for Excavations on or Near Utilities
- 9 Silica Procedure
- 10 Asbestos Control Requirements
- 11 Seller Waste Process Evaluation List
- 12 Pre-lift Checklist
- 13 Identification of Current Subcontractor Employees with Beryllium-Exposure History
- 14 Energized Electrical Work Plan
- 15 Elevated Work Plan
- 16 Excavation Plan
- 17 Major Equipment Declaration
- 18 Hazard Analysis Plan
- 19 KSO Prototype Plant and OSHA Tag-out Systems Equivalency
- 20 Hot Work Permit
- 21 Respirator Permit
- 22 Confined Space Entry Permit
- 23 KAPL Excavation Permit
- 24 KAPL Penetration Permit
- 25 Asbestos Work Permit
- 26 KAPL Beryllium Work Permit
- 27 Procedure Template
- 28 Disposal/Recycling Facility Acceptance Form
- 29 Typical Elements Required for a Rigging Sketch
- 30 Non Permit Confined Space Entry Form