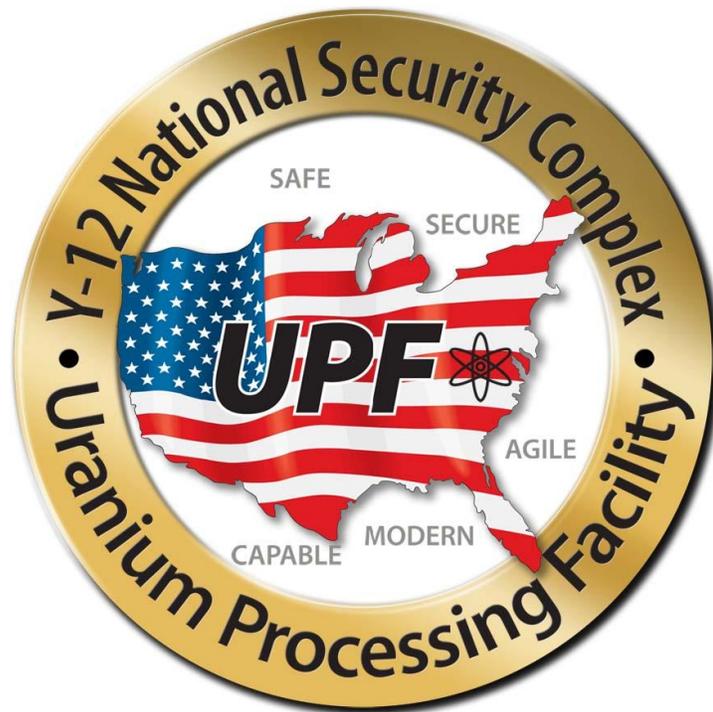


SUPPLEMENTAL CONDITIONS
UPF Construction (CON 06/11)



UPF Construction

Supplemental Conditions

Prepared by

Uranium Processing Facility Program Team

Y-12 National Security Complex, Oak Ridge, Tennessee 37831

Managed by Babcock & Wilcox Technical Services Y-12, LLC, for the U.S. Department of Energy
Under contract number DE-AC-05-00OR22800

June 2011



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1.0 GENERAL

- 1.1. Work is located at the Y-12 National Security Complex (Y-12), a government-owned facility, managed by B&W, Y-12 L.L.C. (Company), for the Department of Energy (DOE), in Oak Ridge, Tennessee. Work consists of providing trained and qualified personnel, supervision, materials, tools, equipment, and services (except that specified to be furnished or performed by others) sufficient to perform the work required by the Subcontract.
- 1.2. The Company will provide site specific work rules to the Seller. All Seller employees and those of lower-tier subcontractors will be required to acknowledge receipt and understanding of the site specific work rules by signature.
- 1.3. Normal construction work hours are 7:00 a.m. – 5:30 p.m., Monday through Thursday. Seller requests for training, badges, vehicle access, and permits, and the processing of submittals are to be performed during normal construction work hours. The Company will process Seller requests during normal work hours.
- 1.4. Seller shall obtain approval from the Company to perform work at Y-12 outside the normal construction work hours at least two (2) workdays in advance. Seller shall use the Overtime Request form, CFN-0096.
- 1.5. The Company observes the following holidays on an annual basis. Seller shall not schedule work on observed holidays without prior Company approval.
 - New Year's Day
 - Martin Luther King, Jr. Birthday
 - Good Friday (Standard Day Off)
 - Memorial Day
 - Independence Day
 - Companion Day with Independence Day
 - Labor Day
 - Thanksgiving Day
 - Day after Thanksgiving Day (Standard Day Off)
 - Christmas Day
 - Companion Day (Normally Christmas Eve)
- 1.6. The Seller shall submit certified payrolls for all work covered by the Davis-Bacon Act. Submit certified payrolls to the Company Subcontract Technical Representative (STR), for information, within 7 calendar days after each payroll period ends.
- 1.7. A pre-construction meeting will be held and pre-mobilization submittals stasured "Work May Proceed" prior to the Company issuing a Notice-to-Proceed with Seller's subcontracted work. Seller and their lower-tier subcontractor supervisory personnel shall attend. The meeting will be at Y-12 at a mutually agreed to date and time. Seller shall present their organization; work, quality and other plans; and environmental, safety, and health (ES&H) compliance plan to the Company to demonstrate Seller readiness to execute work in accordance with the Subcontract.

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- 1.8. Seller shall designate an Authorized Representative with full responsibility to act for and commit the Seller and lower-tier Subcontractors. The Authorized Representative shall be the Company's primary point of contact with the Seller. The Seller shall notify the Company a minimum of four workdays in advance of any changes to the Authorized Representative or Company-designated "Key Personnel" whenever they become unavailable for performance of work under this Subcontract. Seller shall make every effort to replace such employees with employees of comparable abilities and qualifications who are satisfactory to the Company. If the key person is being reassigned within the Seller's organization rather than employment being terminated, the key person must remain on the job until a replacement is accepted by the Company and is available to begin work at the site, unless otherwise approved by the Company.
- 1.9. Seller shall maintain a list of personnel employed, including lower-tier subcontractors, for performance of the subcontracted work. Seller shall notify the Company of changes relating to all Seller's and lower-tier subcontractor personnel when personnel are terminated, reassigned off site, have resigned, are on extended absence, etc. Include the name of the individual and badge number. Refer to "General Terms and Condition" clause "DOE Security Badges and Clearance Requirements." Timely notification is required to facilitate resolution of contract compliance and release of final payment for badge returns, dosimeter returns, bioassay submissions, and return of Company-furnished items.
- 1.10. Progress meetings and Coordination meetings will be held weekly with the Seller. Seller's Authorized Representative shall attend and arrange to have appropriate lower-tier subcontractors at these meetings. Seller and lower-tier subcontractors' attendance at these meetings is inclusive in the price of the work and will not be reimbursed separately. The Authorized Representative shall have the authority to make price, schedule, and other commitments for their principals and initiate actions responsive to items discussed at the meetings. Items of discussion will include:
 - 1.10.1. Safety
 - 1.10.2. Security
 - 1.10.3. Work schedules and progress
 - 1.10.4. Resolution of problems and action items
 - 1.10.5. Requests for Information, Field Change Notices and Field Change Requests
 - 1.10.6. Administrative matters and procedures
 - 1.10.7. Submittal and materials delivery status
 - 1.10.8. Quality Assurance and nonconforming work items
- 1.11. A Safety and Information meeting will be held monthly with the Seller. Seller's Authorized Representative shall attend and arrange to have appropriate lower-tier subcontractors at these meetings. Topics of discussion will include environmental, safety, health, training, security, and general business.
- 1.12. The Seller shall perform work in compliance with specifications, drawings, drawing notes, and vendor requirements. Seller shall perform work in a skillful, safe, and workman-like manner. The Company may require, in writing, the Seller to remove, from Y-12 or the project, any Seller or lower-tier subcontractor employee the Company deems incompetent, careless, or otherwise objectionable.
- 1.13. Seller personnel, including those of their lower-tier subcontractors, shall fully cooperate with employees of the Company and other Company subcontractors. Seller personnel, including those of their lower-tier subcontractors, shall not commit or permit any act that will interfere with the performance of work by others.

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- 1.14. The Company will issue proposed technical changes to the Seller scope of work using UPF Construction Field Change Documents CFN 1022, UPF Field Change Notice and CFN 1023, UPF Field Change Request. Proposed field change documents initiated by the Seller shall be processed through the Company Field Engineer. The Company may issue a Field Change Document to: (1) notify the Seller of changes; (2) request a proposal for a change, or (3) provide limited authorization to proceed with a change within the general scope of the subcontract. Seller shall respond in accordance with instructions provided in the General Terms and Conditions and as specially noted by the Subcontract Administrator.
 - 1.14.1. A Field Change Document (FCD) is a document used to request a field change from Project Engineering that may affect the original design intent and requires approval by Project Engineering prior to implementation.
 - 1.14.2. The Seller shall be responsible for submitting FCDs, including appropriate supporting documentation, to the Company to request changes to drawings approved by the Company before starting work.
 - 1.14.3. The Seller shall only enter one subject per FCD. However, an FCD may be identified as applicable to multiple components, systems or commodities.
 - 1.14.4. The Seller shall only use the Company FCD forms.
 - 1.14.5. In no case shall an FCD be used to document deficiencies or violations to project drawings, specifications, regulatory, code or legal requirements.
- 1.15. The Company may direct the use of a *Daily Summary of Force Account Work*, CFN-0157, for recording change work performed by the Seller. (Seller's accumulation of costs as incurred with concurrent approval by the STR. The Seller shall submit the completed form to the STR at the end of each day worked).
- 1.16. The Seller shall utilize UPF Construction CFN 1024, Request for Information for a Seller-initiated technical question such as:
 - 1.16.1. Clarification of technical documents
 - 1.16.2. Discovery of a conflict, ambiguity, error, or omission
 - 1.16.3. Request an alternate/substitute to a prescribed method
 - 1.16.4. Clarification of design intent.
 - 1.16.5. Technical questions that affect the operation or safety of equipment, controls, or components.
 - 1.16.6. Dimensional interference clarifications.
 - 1.16.7. Construction of temporary facilities.
 - 1.16.8. Vendor Technical information.
 - 1.16.9. Cost, schedule and charge code clarifications.
 - 1.16.10. Quality code clarifications.
 - 1.16.11. Subcontract scope or technical clarifications.
 - 1.16.12. The Seller shall submit a Request For Information (RFI) including appropriate supporting documentation to the Company if the Seller is unable to understand the technical documents, discovers or perceives a conflict, ambiguity, error or omission in or among the technical documents or has an alternate/substitute material or method to propose that improves cost or schedule.

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- 1.16.13. The Seller shall only enter one subject per RFI; however, an RFI may be identified as applicable to multiple components, systems or commodities.
- NOTE 1: Neither the RFI nor the RFI response is a Company authorization to modify the agreement in any particulars to supplement any other portion of the agreement.
- NOTE 2: Reserved.
- NOTE 3: An RFI response may identify a change and if so, the Seller shall not proceed with the change until authorized by a Company-issued Field Change Notice, Field Change Request or *Subcontract Modification*.
- NOTE 4: Seller shall address a letter to the Company Subcontract Administrator providing notification of any request for compensable schedule impact due to an RFI response.
- 1.17. The Seller shall notify the Company when work is complete and ready for the Company's inspection and acceptance by submitting a *Request for Inspection of Completed Work* to the STR.
- 1.17.1. The request may be for work completed in part or as a whole to recognize contractual milestone completion dates.
- 1.17.2. The Seller shall have a logical process for identifying any pending or outstanding work and for the turnover of the work, either incrementally or in total, to the Company.
- 1.17.3. The Seller shall participate in walk downs to support system and area turnovers as required.
- 1.18. Company-furnished items/services depend on the scope of the Seller's work and may include:
- 1.18.1. Backflow preventer for hydrant water use not to exceed one per Subcontract.
- 1.18.2. Dosimetry for access to the Protected Area (PA), radiological work and Criticality Accident Alarm System (CAAS) areas
- 1.18.3. Emergency ambulance and fire fighting response
- 1.18.4. Sanitary trash dumpsters, recycle paper and cardboard dumpsters
- 1.18.5. Construction radios for emergency notifications
- 1.18.6. Calibration services for Equipment / Instruments to be installed in Facilities
- NOTE 1: Reserved.
- NOTE 2: Reserved.
- NOTE 3: Reserved.
- NOTE 4: Company will provide receipt inspection of permanent plant equipment and materials. Refer to paragraph 5.11 for additional information.
- NOTE 5: The Company will provide open ground space for Seller furnished office facilities on or in close proximity to the work site.
- NOTE 6: Seller shall coordinate requests for Company-furnished items with the FE at least eight (8) workdays in advance. Obtain emergency ambulance and fire fighting response by contacting Plant Shift Superintendent (PSS) at 574-7172, dialing 911 from a plant phone or calling PSS using Company radio.
- 1.19. Seller's employees entering the PA shall wear a Personal Nuclear Accident Dosimeter (PNAD) or Thermoluminescent Dosimeter (TLD). PNADs are available at portal checkpoints. Seller shall ensure PNADs are returned at the completion of the work. PNADs are not included in an annual radiation monitoring report.
- 1.20. The Company will maintain a complete set of drawings and specifications at the work site available to Seller and Company personnel. The Seller shall maintain a copy of Company-approved subcontract submittals and a copy of the Subcontract including all modifications at the work site.

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2.0 OPERATING FACILITIES

- 2.1. Facilities may be in operation during the Seller's work. The Company will coordinate operating Facilities' activities and the Seller's work. Seller shall request permission from the Company eight (8) workdays in advance of need to work in an operating area and receive authorization from the FE before starting such work. Seller shall protect Company equipment, tools, materials, and facilities during execution of work and is responsible for repair of damages.
 - 2.2. Means of egress components and exit discharge areas shall remain operable and shall not be obstructed by construction activities or lay down areas. Blocking or wedging of exit or fire doors is not permitted. Exit doors must swing fully open with a single-handed push. Where the work requires disabling an exit or fire door, the Seller shall provide signage with exit instructions.
 - 2.2.1. Do not remove or paint over UL/FM or similar labels on fire doors.
 - 2.3. A Seller representative shall attend daily "Plan of the Day" (POD) and "Plan of the Week" (POW) meetings conducted by the Company. Refer to Section 3.6 for additional information on Seller responsibilities for the Plan of the Week meetings.
 - 2.4. Seller shall provide and document a daily pre-job brief with employees and visitors prior to beginning each shift's work activities or when conditions change, and for others reporting after the start of shift work activities. Perform and document a follow-up brief at the end of each shift and note feedback and any unusual events occurring that shift. Sign-in sheets for the job briefs shall be placed into the Work Control Package. Pre-job brief shall include:
 - 2.4.1. Scope of work
 - 2.4.2. Hazards and controls associated with the work. Reference the applicable parts of the *Activity Hazard Analysis* (AHA)
 - 2.4.3. Redlines or revisions to the AHA
 - 2.4.4. Qualification & Training requirements and worker interface
 - 2.4.5. Any particular security, or environmental concerns/conditions, limitations
 - 2.4.6. Tools, materials, and equipment needed
 - 2.4.7. Hold or witness points for quality, safety, etc.
 - 2.4.8. Identification of manufacturers' material installation and equipment operating instructions
 - 2.4.9. Work Permit requirements (Radiological, Excavation, Hot Work, etc.), and
 - 2.4.10. Identify contacts and other project personnel
 - 2.4.11. Feedback from the crew to ascertain that they understand the briefing or to add/share information and lessons learned.
- NOTE 1: At all times, an authorized and responsible Seller employee shall escort and supervise all project visitors/vendors/delivery personnel.
- 2.5. Seller shall submit requests for system outages a minimum of eight (8) workdays in advance of need. Requests shall include detailed activities and schedule durations for the work to be performed during the outage. The Company will coordinate an outage schedule. Seller shall hold outages to a minimum in number and duration. Seller shall identify critical outages on the schedule submitted to the Company.

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- 2.6. The Company will provide *Excavation/Penetration Permits*, approve Seller initiated Hot Work Permits, *Confined Space Permits* (for existing confined spaces), and authorizations for Storm and Sanitary Water Discharge (per regulatory permits).
- 2.6.1. Excavation permit for work performed by the Seller will be issued by CFN 1030, UPF Site Excavation Permit.
- 2.6.1.1. Seller responsibilities include dewatering and removal of storm water. Develop and review individual plans and approach with the Company Field Engineer; obtain approval prior to implementation.
- 2.6.1.2. Seller shall ensure that backfilling operations do not damage underground commodities.
- 2.6.1.3. Results of Soil Compaction Testing will be recorded by the Company on CFN 1032, UPF Daily Soil Compaction Test Record.
- 2.6.2. Seller shall request Company-provided permits/authorizations four (4) workdays prior to need.
- 2.6.3. The Company will make notifications required by Tennessee One-Call.
- 2.6.4. An *Excavation Permit* is required for excavation work activities, except for the following:
- 2.6.4.1. Work associated with the maintenance, removal, and/or replacement of pavement and sidewalks not in excess of their thickness.
- 2.6.4.2. Maintenance replacement of the same location, depth, and size as the items being replaced (i.e. sign post, poles, etc.).
- 2.6.4.3. Earth/rock excavations, twelve (12) inches or less in depth, with a surface area not in excess of twenty-five (25) square feet using hand-held tools, excluding jackhammers.
- 2.6.5. A *Penetration Permit* is required for all penetrations in walls, floors, ceilings and roofs except for the following conditions:
- 2.6.5.1. Where the wall penetrations are less than eight (8) inches in any direction, the Seller shall obtain a review from Company Fire Protection Engineer and a scan of the penetration area for energized electrical.
- 2.6.5.2. Where the penetrations are within a floor or column, the Seller shall obtain a review from the Company Structural Engineer and Fire Protection Engineer and a scan of the penetration area for energized electrical.
- 2.6.5.3. Work associated with the installation of fasteners is $\frac{3}{4}$ inch or less in embedded depth, to floors, walls, ceilings and roofs, in any facility.
- 2.6.5.4. Penetrations of pavement and sidewalk are not in excess of their thickness.
- 2.6.5.5. Penetrations of masonry are not exceeding the face shell thickness.
- 2.6.5.6. Penetrations in single layer surface where both sides of the surface are clearly visible.
- 2.6.6. Seller shall comply with instructions/requirements contained in the permit and return expired Hot Work Permits to the STR or Issuing Authority. Completed *Excavation and Penetration Permits* will be maintained within the respective Work Control Package.
- 2.7. Control dust emissions during work. Seller shall prevent dust from migrating to areas adjacent to the work area. Limit use of water to prevent erosion. Seller shall provide hoods, enclosures or other methods of containment during sandblasting or similar operations.

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- 2.8. Reserved.
- 2.9. Reserved.
- 2.10. Seller shall obtain approval from Company's Facility Operations Manager prior to delivering hazardous materials for use or storage at or near an on-site Nuclear Facility (e.g. combustible, flammable, corrosive). Company may elect to limit Seller's quantities of hazardous materials brought to or near the Facility.
- 2.11. Seller's personnel accessing the PA or Nuclear Facilities shall complete Company-provided Safety Basis 202 Training.
- 2.12. Reserved.

3.0 WORK PLANNING AND CONTROL

- 3.1. Seller shall obtain Company approval of all pre-mobilization submittals before the Company issues a Notice-to-Proceed (NTP) to the Seller for mobilization and other Y-12 work activities.
- 3.2. Seller is responsible for initial acceptance of the work site prior to beginning work and to ensure work is executed in compliance with the subcontract documents.
- 3.3. Reserved.
- 3.4. Construction Work Control Program
 - 3.4.1. Seller work performance will be augmented with Seller prepared Work Control Packages described herein. The work control process is to identify and control field work in accordance with Integrated Safety Management System (ISMS) core functions and guiding principles. This process requires an integrated effort between workers, line supervision, technical experts, functional representatives, and project management to identify the scope of work to be performed along with associated hazards pertaining to the work and to determine controls for those hazards. The Seller's Work Control Package will include the following:
 - 3.4.1.1. Description of work
 - 3.4.1.2. Authorization and Approval of Work Package
 - 3.4.1.3. Permits
 - 3.4.1.4. Approval to Begin Work
 - 3.4.1.5. Design Installation Documents
 - 3.4.1.6. Pre-job, Tailgate and Post-job Briefings
 - 3.4.1.7. Inspection Forms and Test Reports
 - 3.4.1.8. Procedures, including Special Instructions
 - 3.4.1.9. Welding Process Documents
 - 3.4.1.10. Quantities Report
 - 3.4.1.11. References
 - 3.4.1.12. Job-Specific Training Requirements
 - 3.4.1.13. Miscellaneous Field-Generated Paperwork
 - 3.4.1.14. Lessons Learned

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- 3.4.2. It is the responsibility of the Seller to ensure work performed is within the scope of the work package. For each Work Control Package, the Seller shall:
 - 3.4.2.1. Provide Seller prepared Work Control Packages to the Company for compliance review and concurrence with the control requirements described herein prior to the start of work. The Company will maintain Work Package Numbering and provide numbers to the Seller.
 - 3.4.2.2. Conduct an initial pre-job briefing for Field supervisors, craft workers and support organizations. Briefing shall include Activity Hazard Analysis and controls applicable to the assigned work, as well as any Lessons Learned and subsequently, any changes to the scope of work.
 - 3.4.2.3. Perform work and ensure that hold points are adhered to.
 - 3.4.2.4. Make timely and appropriate notifications to support organizations for in process work activities that require verification, inspection and/or testing.
 - 3.4.2.5. Upon completion, leave the work area in an acceptable and safe condition, properly dispose of waste and conduct a post-job brief for the purposes of obtaining feedback for continuous improvement and lessons learned opportunities.
 - 3.4.2.6. Utilize the forms listed below:
 - 3.4.2.6.1. CFN-1016, UPF Work Package Cover Sheet
 - 3.4.2.6.2. CFN-1017, UPF Design & Installation Documents List
 - 3.4.2.6.3. CFN-1018, UPF Construction Special Instruction
 - 3.4.2.6.4. CFN-1019, UPF Pre-Job Work Area Walk down
 - 3.4.2.6.5. CFN-1020, UPF Work Package Change Notice
 - 3.4.2.6.6. CFN-1021, UPF Work Package Pre-Job / Post-Job Briefing
 - 3.4.2.6.7. CFN-1058, UPF Construction Work Package Suspension / Cancellation
 - 3.4.2.7. Submit the Work Control Package to the Company for approval upon completion of all work described in each individual Work Control Package.
 - 3.4.2.8. Attend Company provided training of Seller personnel (field supervisors and above) on the elements of the Construction Work Control Package process.
- 3.5. The Seller shall submit a Daily Report to the Company no later than the next workday. The Daily Report shall include:
 - 3.5.1. Subcontract Number and Subcontractor name,
 - 3.5.2. Project Name,
 - 3.5.3. Number of employees of Seller and each its subcontractors and hours worked, identified by craft including non-manual supervision,
 - 3.5.4. Equipment Make and Model on site and the condition of the equipment and hours worked or on standby,
 - 3.5.5. Names of visitors,
 - 3.5.6. Description of work, including tests, or inspections performed, and witness/hold points met,
 - 3.5.7. Environmental, Health and Safety observations and incident,
 - 3.5.8. Special comments (e.g. competent person input, delays, disruptions, critiques),
 - 3.5.9. Seller Authorized Representative or designee signature,

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- 3.5.10. Weather conditions and temperature,
 - 3.5.11. Date,
 - 3.5.12. Event(s)/Condition(s) Reported, and
 - 3.5.13. Attachments.
- 3.6. The Seller shall attend a Plan of the Week meeting and provide a completed Manpower Level Chart for each week's meeting. The Seller's plan should account for work activities, material, equipment and labor resources. Additionally, the Seller's plan should include project documents such as Field Changes, non-conformance reports, submittals, etc. that may impact or affect planned work activities.
- 3.6.1. The Seller should review the productivity and performance each week.
 - 3.6.2. The Seller should review each activity scheduled within the following three weeks for start and completion dates, manpower allocation, resources such as equipment, availability of drawings and technical information.
 - 3.6.3. The Seller should document, discuss and provide reasons for those activities that did not complete as planned.
 - 3.6.4. The Seller should discuss/issue recovery action plans as required.
 - 3.6.5. Seller representatives will participate in discussion and review of a Work Plan Action Items list maintained by the Company.
 - 3.6.6. Quantity Reporting
 - 3.6.6.1. Each week, the Company will prepare a UPF Project Weekly Quantity Report and provide to the Seller to record work progress and quantities installed during the previous week.
 - 3.6.6.2. Seller shall return the completed report to the Company Field Engineer for concurrence on the first work day of each week.
 - 3.6.6.3. The Company will verify quantities reported by the Seller for overall project status and scheduling.
 - 3.6.6.4. The Company will provide training to Seller personnel.
 - 3.6.6.5. Seller to record quantities on the form noted:
 - 3.6.6.5.1. UPF Project Weekly Quantity Report
- 3.7. The Seller shall request Company-provided field survey support by submitting a UPF Survey Work Request, CFN-1025 to the responsible Field Engineer. Where possible, a minimum of 24 hours advance notice should be provided when requesting survey work. Company-provided survey support consists of baseline surveys for work boundaries, baseline horizontal and vertical control, baseline reference points and survey monuments. Seller is responsible for surveys to support excavation and backfill, line and grade, anchor bolt layout and similar type surveying.
- 3.8. Concrete Operations
- 3.8.1. In addition to the requirements prescribed in the concrete technical specifications, the Seller shall:
 - 3.8.1.1. Use UPF concrete pre-placement checklist and release record (Pour Card) to document acceptance of commodities such as formwork, line and grade, reinforcing, anchor bolts and other embedded items.
 - 3.8.1.2. Where structural steel is to be erected on concrete, have 3 field-cured cylinders in addition to the laboratory cured cylinders required by the project design specifications for verification of the design strength.

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- 3.8.1.3. Record information, test results and inspections on the forms noted:
 - 3.8.1.3.1. CFN – 1041, UPF Concrete Placement Card
 - 3.8.1.3.2. CFN – 1042, UPF Concrete Test Record
 - 3.8.1.3.3. CFN – 1067, UPF Grout Request/Release/Inspection Report

- 3.9. Seller responsibilities within the UPF Project NCR process are described herein. The process establishes project specific requirements during construction activities for identifying, controlling, segregating, dispositioning, classifying, documenting, trending and implementing actions associated with identified nonconforming items. Seller responsibility includes nonconformances resulting from vendor-supplied items and services, construction assembled items, including nonconformances identified during storage, installation and preoperational testing. The Seller shall:
 - 3.9.1. Ensure that deficient items (items that do not conform to specified requirements) are prevented from unintended use or installation. This control shall provide for identification, evaluation, segregation (when practical), disposition implementation, re-inspection and closure of nonconforming conditions and for notification to the functions concerned for final approval.
 - 3.9.2. Document and validate NCR conditions.
 - 3.9.3. Submit NCRs to the Company for disposition.
 - 3.9.4. Evaluate each nonconforming condition for potential corrective action to prevent recurrence of the problem and implement corrective actions.
 - 3.9.5. Use the following forms associated with documentation of nonconforming work:
 - 3.9.5.1. CFN 1063, UPF NCR Hold Tag
 - 3.9.5.2. CFN 1064, UPF NCR Conditional Release Tag
 - 3.9.5.3. CFN 1065, UPF NCR Nonconformance Report (NCR)
 - 3.9.6. The Company will provide NCR and Price Anderson Amendment Act awareness training to Seller personnel.

- 3.10. In addition to the requirements prescribed in the technical specifications that include pressure testing of piping, tubing and components, the Seller shall:
 - 3.10.1. Conduct any field tests of piping using written test procedures. As a minimum, the testing procedure shall include safety requirements, clear identification of test boundaries, isolation points and system over pressurization protection. Record test results on forms noted below.
 - 3.10.2. Ensure pretest preparation and release of systems or components for testing include confirmation that temporary items (i.e. blinds, temporary piping) are suitable for use at test pressures.
 - 3.10.3. Receive approval of the Company on the test medium and source prior to use.
 - 3.10.4. Perform a test review to confirm key elements of the pressure test information, test requirements, test gauge pressure calculation, pretest items, test results, test equipment, test acceptance and test restoration verification. Record confirmation of test criteria on forms noted below.
 - 3.10.5. Prepare a specific test plan for Company review and approval for all pneumatic testing, for high pressure hydrostatic testing (greater than 500 PSI) and for testing at ambient temperatures below 40 F.

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- 3.10.6. Where equipment is included within the boundaries of a pipe test, ensure that the test medium is compatible with the equipment and the equipment maximum allowable pressure or differential pressure is not exceeded.
- 3.10.7. To minimize Microbiologically Influenced Corrosion (MIC) develop a plan that ensures that the proper hydro water quality is tested and used. These requirements are generally applicable to stainless steel (304/316) pipe, but may be expanded to include other pipe material as required by project procedures. The plan shall include:
 - 3.10.7.1. Testing methods of the hydro water to verify it meets specification requirements including chlorides and bacteria levels.
 - 3.10.7.2. Provisions or procedures to segregate water including avoidance of cross-contamination of supply lines, storage tanks, truck tanks, etc.
 - 3.10.7.3. Monitoring of the water source from the site by testing at receipt or other positive verification that the water received is from the correct source. Note that test results from water at Y-12 will be provided by the Company.
 - 3.10.7.4. Provisions that the pipe is maintained in a clean and dry condition including low-point checking and draining of any condensate.
 - 3.10.7.5. Minimizing water fill durations for hydro (stagnant condition). Water may be subsequently used for flush for extended durations but the duration of stagnant water condition shall be minimized.
 - 3.10.7.6. Possible use of a biocide in accordance with project specifications including any monitoring as necessary to provide any required residual.
 - 3.10.7.7. Provisions to completely dry the pipe after the hydro.
 - 3.10.7.8. Utilize the following forms as applicable:
 - 3.10.7.8.1. CFN -1011, UPF Drainage/Sewer Pipe Test Report
 - 3.10.7.8.2. CFN -1012, UPF Pressure Test Data Sheet
 - 3.10.7.8.3. CFN -1013, UPF Pressure Test Log
 - 3.10.7.8.4. CFN -1014, UPF Valve Line-Up Sheet
 - 3.10.7.8.5. CFN -1057, UPF Pneumatic Test Safety Plan
- 3.11. In addition to the requirements prescribed in the technical specifications that include underground piping, the Seller shall:
 - 3.11.1. Maintain qualification records relating to the installation for non-metallic piping systems as required by the UPF project technical specifications.
 - 3.11.2. Provide input to the project integrated schedule that identifies work sequence by areas.
 - 3.11.3. Ensure activities such as pressure testing, cathodic protection, coating and wrapping, inspection, as-built documents are complete prior to releasing area for backfilling operations.
 - 3.11.4. Conduct field work in a manner that incorporates cleanliness inspections and deficiency correction to maintain internal cleanliness and minimize the need for flushing and cleaning activities.
 - 3.11.5. Keep all pipe openings covered during non-work hours and prohibit placement of any materials, tools or components inside of erected piping systems.
 - 3.11.6. Prevent unwanted or undesirable foreign material from entering piping system and components by means of covers or dams at all times.
 - 3.11.7. Control installation so that piping and components that have already been installed are not subject to contamination when subsequent installation operations are performed.

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- 3.11.8. Caps, plugs or acceptable closures shall be used to seal openings and to protect internal surfaces, threads and end preparations.
- 3.11.9. Utilize the following forms as applicable:
 - 3.11.9.1. CFN -1000, UPF Inspection Record for Underground Piping
 - 3.11.9.2. CFN -1001, UPF Flanged Connection Data Sheet
 - 3.11.9.3. CFN -1002, UPF Coated and Wrapped Pipe Inspection Record
 - 3.11.9.4. CFN -1003, UPF Piping Fabrication and Inspection Record
 - 3.11.9.5. CFN-1009, UPF Pipe Cleanliness Inspection Record
- 3.12. In addition to the requirements prescribed in the technical specifications that include aboveground piping, the Seller shall:
 - 3.12.1. Ensure piping flanges or weld ends are in satisfactory alignment with the equipment flanges or weld ends. Pipe ends, welded or flanged, of connecting pipe shall not be “cold pulled” into position nor shall any undue “pipe stress” be placed on equipment nozzles. Flange bolts at rotating equipment flanges shall be capable of removal by hand without binding, prying, or stress when loosened.
 - 3.12.2. Conduct field work in a manner that incorporates cleanliness inspections and deficiency correction to maintain internal cleanliness and minimize the need for flushing and cleaning activities.
 - 3.12.3. Keep all pipe openings covered during non-work hours and prohibit placement of any materials, tools or components inside of erected piping systems.
 - 3.12.4. Prevent unwanted or undesirable foreign material from entering piping system and components by means of covers or dams at all times.
 - 3.12.5. Control of installation so that piping and components that have already been installed are not subject to contamination when subsequent installation operations are performed.
 - 3.12.6. Caps, plugs or acceptable closures shall be used to seal openings and to protect internal surfaces, threads and end preparations.
 - 3.12.7. Utilize the following forms as applicable:
 - 3.12.7.1. CFN-1003, UPF Piping Fabrication and Inspection Record
 - 3.12.7.2. CFN-1004, UPF Bolt Tensioning Inspection Record
 - 3.12.7.3. CFN-1005, UPF Flanged Connection Inspection Record
 - 3.12.7.4. CFN-1006, UPF Inspection Record for Aboveground Pipe
 - 3.12.7.5. CFN-1007, UPF Cutting Pipe threads / Threaded Joint Inspection Record
 - 3.12.7.6. CFN-1009, UPF Pipe Cleanliness Inspection Record
- 3.13. Welding
 - 3.13.1. Seller shall conduct welding operations in accordance with requirements of the Y-12 Welding Program Manual, Y17-015 and the specified technical requirements.
 - 3.13.2. The objective of the Welding Program is to ensure that welding activities at the site are in compliance with Department of Energy (DOE) Orders, Engineering specifications and requirements, plant procedures, and industry codes and standards. The Welding Program Manual establishes uniform administrative control of welding while recognizing that variations may be necessary for Y-12’s mission success.
 - 3.13.3. Seller and any lower tier subcontractor organization performing welding shall utilize appropriate welding process UCN forms contained within the Y-12 Welding Program Manual, Y17-015.

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- 3.14. Document Management
 - 3.14.1. The Seller shall have written procedure(s) or instruction(s) that establishes a system for receipt, control and distribution of design documents. The procedure(s) or instruction(s) shall provide for:
 - 3.14.1.1. Verification of actual documents received and their subsequent control in the field.
 - 3.14.1.2. Maintenance of document control logs or registers for drawings, interim changes, specifications and vendor prints, listing current revision of each document to preclude use of invalid and/or obsolete documents.
 - 3.14.1.3. Removal of superseded or voided documents from the work place to assure against unintended use. All obsolete documents retained for legal and/or knowledge-preservation purposes are suitably identified.
 - 3.14.1.4. The following forms shall be used when applicable:
 - 3.14.1.4.1. SF 1008-UCN, UCNI Cover Sheet
 - 3.14.1.4.2. UCN-23015, UPF Controlled Document Receipt Acknowledgement Form
- 3.15. Post Installed Anchors
 - 3.15.1. In addition to the requirements outlined in the technical specifications the Seller shall:
 - 3.15.1.1. Submit for approval by the Company, Seller procedure(s) or instructions(s) that address the control and use of post-installed anchors (expansion anchors, adhesive anchors, self-drilling anchors and similar assemblies) that are installed in hardened concrete.
 - 3.15.1.2. Record inspection results of post-installed anchor installations on the forms noted:
 - 3.15.1.2.1. CFN – 1081, UPF Post-Installed Anchors Inspection Record.
- 3.16. Structural Steel Erection
 - 3.16.1. In addition to the requirements outlined in the technical specifications the Seller shall:
 - 3.16.1.1. Submit for approval by the Company a written steel erection plan that addresses sequencing of work, method of achieving bolt tightness requirements and preassembly plans.
 - 3.16.1.2. Record results of structural steel erection on the forms noted:
 - 3.16.1.2.1. CFN -1087, UPF Structural Steel Inspection Report
- 3.17. Reinforcing Bar Mechanical Splicing
 - 3.17.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.17.1.1. Install reinforcing mechanical splices in accordance with the manufacturer's instructions.
 - 3.17.1.2. Use trained and qualified installers to perform reinforcing mechanical splices.
 - 3.17.1.3. Record inspections results of mechanical splicing on the forms noted:
 - 3.17.1.3.1. CFN – 1087, UPF Mechanical Coupler Splice Report
- 3.18. Field Painting and Coatings
 - 3.18.1. In addition to the requirements outlined in the technical specifications, the Seller shall:

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- 3.18.1.1. Perform painting and coatings type work on items that have been released by the Company.
- 3.18.1.2. Record results on field painting and coatings work on the form noted:
 - 3.18.1.2.1. CFN -1069, UPF Surface Preparation and Coating Inspection Record
- 3.19. Penetration Closures and Seals
 - 3.19.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.19.1.1. Install approved penetration closures / seals in accordance with the approved project specifications and manufacturer's procedures.
 - 3.19.1.2. Use trained and qualified installers to perform penetration closures and seals.
 - 3.19.1.3. Record inspection results of penetration closure/seals on the forms noted:
 - 3.19.1.3.1. CFN – 1088, UPF Penetration Closure/Seal Inspection Report
- 3.20. Instrumentation Installation
 - 3.20.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.20.1.1. Implement a sequence and work process that includes cleanliness inspections and deficiency correction, which maintains internal cleanliness and minimizes the need for flushing and cleaning activities.
 - 3.20.1.2. Blow all pneumatic systems with oil free, dry compressed air prior to final connections.
 - 3.20.1.3. Ensure that instruments are calibrated prior to turnover.
 - 3.20.1.4. Ensure that all instruments are properly tagged for easy identification in accordance with project requirements.
 - 3.20.1.5. Document inspections using the form noted below:
 - 3.20.1.5.1. CFN-1095, Instrumentation Installation Inspection Record
- 3.21. Instrumentation Testing
 - 3.21.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.21.1.1. Ensure that all measuring and testing equipment is calibrated and controlled.
 - 3.21.1.2. Apply a calibration sticker indicating the technician's initials to all instruments after calibration.
 - 3.21.1.3. Submit all test instructions for approval by the Company prior to any testing. Subcontractor shall submit instruction(s) to the Company for review and approval not less than 30 calendar days or as directed by Company prior to the commencement of work.
 - 3.21.1.4. Record calibration, test results and inspections on the forms noted:
 - 3.21.1.4.1. CFN-1106, Analog Instrument Calibration Record
 - 3.21.1.4.2. CFN-1107, Digital Instrument Calibration Record
 - 3.21.1.4.3. CFN-1108, Instrument Pressure Test Record
 - 3.21.1.4.4. CFN-1109, Loop Inspection and Test Record
 - 3.21.1.4.5. CFN-1110, Relief Valve Inspection and Final Acceptance Record
 - 3.21.1.4.6. CFN-1111, Orifice Plate Specification Check Record

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- 3.21.1.4.7. CFN-1112, Flow Instrument Inspection Record
- 3.21.1.4.8. CFN-1113, Level Instrument Inspection Record
- 3.21.1.4.9. CFN-1114, Pressure Instrument Inspection Record
- 3.21.1.4.10. CFN-1115, Pressure Relief Valve Settings Instrument Inspection Record
- 3.21.1.4.11. CFN-1116, Control Valve and MOVs Instrument Inspection Record
- 3.21.1.4.12. CFN-1117, Analytical Instruments Inspection Record
- 3.21.1.4.13. CFN-1118, Temperature Instrument Inspection Record

3.22. Pipe Supports

- 3.22.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.22.1.1. Ensure that spring can stops remain in place at the cold load settings until directed to remove stops by the Company.
 - 3.22.1.2. Submit for approval by the Company procedure(s) or instruction(s) that address the installation, inspection, and documentation of pipe/tubing supports.
 - 3.22.1.3. Provide provisions for temporary support(s) for hydrostatic and pneumatic pressure test if permanent support(s) are not installed.
 - 3.22.1.4. Provide method for Line-Balancing of spring can settings at their design cold load setting.
 - 3.22.1.5. Ensure that pipe supports are installed in such a manner that no undue strain is placed on adjacent rotating equipment nozzles or flanges.
 - 3.22.1.6. Record inspections of pipe supports on the form noted:
 - 3.22.1.6.1. CFN-1008, UPF Pipe Support Inspection Record

3.23. Insulation

- 3.23.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.23.1.1. Only perform work on components that have been released for insulation by the Company.
 - 3.23.1.2. Request formal release by the Company and record inspection of work on the form noted:
 - 3.23.1.2.1. CFN -1119, UPF Insulation Release and Inspection Record

3.24. Vessel, Tank, Exchanger and other Stationary Equipment Installation

- 3.24.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.24.1.1. Check dimensions of foundations, embedments and all features interfacing with the equipment being erected/installed. Discrepancies shall be submitted to the Company for disposition using an approved RFI form.
 - 3.24.1.2. Conduct any field testing of equipment using written test procedures reviewed and approved by the Company. Subcontractor shall test procedures not less than 30 calendar days, or as directed by the Company, prior to the commencement of work. As a minimum, the procedure shall include the specific information for the test and a space to record test results and applicable drawings that reflect the configuration and limits of the test.
 - 3.24.1.3. Obtain release from the Company prior to final closure of equipment or component

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- 3.24.1.4. Implement a sequence and work process that include cleanliness inspections and deficiency correction, that maintains internal cleanliness and that minimizes the need for flushing and cleaning activities.
 - 3.24.1.5. Keep all equipment openings covered during non-work hours and prohibit placement of any material, tool or component inside of erected equipment.
 - 3.24.1.6. Record inspections of work on the forms noted:
 - 3.24.1.6.1. CFN -1120, Vessel/Tank/Drum Inspection Record
 - 3.24.1.6.2. CFN -1121, Exchanger Inspection Record
 - 3.24.1.6.3. CFN -1122, Miscellaneous Stationary Equipment Inspection Record
- 3.25. Installation of Rotating Equipment
- 3.25.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.25.1.1. Check dimensions of foundations, embedments and all features interfacing with the equipment being erected/installed. Discrepancies shall be submitted to the Company for disposition using an approved RFI form.
 - 3.25.1.2. Use shims that are smooth and flat. Shims shall not be galvanized, laminated or painted. Shims that will be grouted in place may be either carbon steel or stainless steel. Exposed shims that will be left in place shall be stainless steel.
 - 3.25.1.3. Use a combination of shims yielding a shim pack of no more than five (5) shims per shim pack location when supporting rotating equipment.
 - 3.25.1.4. Perform an alignment check of equipment prior to grouting to verify that coupling spacing and final alignment can be achieved. This is not required for chain or belt driven equipment.
 - 3.25.1.5. Ensure that piping flanges or weld ends are in acceptable alignment with the equipment flanges or weld ends. Pipe ends, welded or flanged, of connecting pipe shall not be “cold pulled” into position nor shall any undue “pipe stress” be placed on equipment nozzles. At final alignment, flanges bolts at equipment flanges shall be capable of removal by hand without binding, prying or stress when loosened.
 - 3.25.1.6. Perform “rocking” or “soft-foot checks” on each equipment foot to specified requirements.
 - 3.25.1.7. Document alignment of the rotating equipment.
 - 3.25.1.8. Conduct all field tests of equipment using supplier’s test procedures.
 - 3.25.1.9. Implement a sequence and work process that include cleanliness inspections and a deficiency correction, that maintains internal cleanliness and that minimizes the need for flushing and cleaning activities.
 - 3.25.1.10. Keep all equipment openings covered during non-work hours and shall prohibit placement of any material, tool or component inside of erected equipment.
 - 3.25.1.11. Record inspections on the forms noted:
 - 3.25.1.11.1. CFN -1123, UPF Coupling Alignment Data Sheet
 - 3.25.1.11.2. CFN -1124, UPF Chain or Belt Driven Equipment Alignment Sheet
 - 3.25.1.11.3. CFN -1125, UPF Pump Inspection Record

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- 3.25.1.11.4. CFN -1126, UPF Compressor Inspection Record
- 3.25.1.11.5. CFN -1127, UPF Agitators and Mixers Inspection Record
- 3.25.1.11.6. CFN -1128, UPF Motor Drivers Inspection Record
- 3.25.1.11.7. CFN -1129, UPF Engine Driver Inspection Record

3.26. Special Equipment and Package Unit Installation

- 3.26.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.26.1.1. Check dimensions of foundations, embedments and all features interfacing with the equipment being erected/installed. Discrepancies shall be submitted to the Company for disposition using an approved RFI form.
 - 3.26.1.2. Conduct any field testing of equipment using written test procedures reviewed and approved by the Company. Subcontractor shall submit test procedures not less than 30 calendar days prior to the commencement of work. As a minimum, the procedure shall include the specific information for the test and a space to record test results and applicable drawings that reflect the configuration and limits of the test.
 - 3.26.1.3. Implement a sequence and work process that includes cleanliness inspections and deficiency correction, that maintains internal cleanliness and that minimizes the need for flushing and cleaning activities.
 - 3.26.1.4. Keep all equipment openings covered during non-work hours and shall prohibit placement of any materials, tools or components inside of erected equipment.
 - 3.26.1.5. Record inspections on the forms noted:
 - 3.26.1.5.1. CFN -1130, UPF Special Equipment and Package Unit Inspection Record
 - 3.26.1.5.2. CFN -1131, Crane and Hoist Inspection Record
 - 3.26.1.5.3. CFN -1132, Air Cooled Exchanger Inspection Record
 - 3.26.1.5.4. CFN -1133, Air Cooler Inspection Record

3.27. Heating, Ventilation and Air-Conditioning Duct Work

- 3.27.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.27.1.1. Submit for approval by the Company procedure(s) or instruction(s) that address the installation, inspection, and documentation of HVAC ductwork and components.
 - 3.27.1.2. Ensure pitot tube access holes are installed and will be accessible after installation for system balancing.
 - 3.27.1.3. Provide proper enclosures for completed shop and/or field fabricated duct segments to prevent dust or debris during storage or shipment.
 - 3.27.1.4. Ensure internal cleanliness is maintained, inspected, and documented during installation of duct segments.
 - 3.27.1.5. Ensure that Fire Dampers are installed in accordance with design documents and that access doors are free from obstructions and accessible for re-setting after functional test (post installation).
 - 3.27.1.6. Submit for approval by the Company a project specific plan for the leak testing and functional testing of completed system(s) in accordance with design documents

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- 3.27.1.7. Submit for approval by the Company a project specific plan for the air balancing of the system(s) in accordance with design documents.
- 3.27.1.8. Record Inspections and Test Results on the forms noted:
 - 3.27.1.8.1. CFN -1134, UPF HVAC Inspection Record
 - 3.27.1.8.2. CFN -1135, UPF HVAC Test Inspection Record
- 3.28. Control of Measuring and Testing Equipment
 - 3.28.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.28.1.1. Ensure that M&TE is calibrated, or checked against, equipment certified to recognize standards at prescribed manufacturer's or project required intervals.
 - 3.28.1.2. Ensure that all M&TE has a calibration sticker affixed, when physically possible, which includes the M&TE unique ID, the calibration due date and provides traceability back to the calibration records.
 - 3.28.1.3. Use calibration instructions for each type of M&TE calibrated.
 - 3.28.1.4. Ensure that the handling, preservation and storage of M&TE are in accordance with manufacturers recommendations.
 - 3.28.1.5. Maintain a process that documents where M&TE has been used.
 - 3.28.1.6. Maintain a calibration recall process to ensure that M&TE devices are recalled for calibration when required.
 - 3.28.1.7. Maintain process for evaluating the impact on completed installations for M&TE that is lost, damaged or found to be out of calibration and document any deficiencies.
 - 3.28.1.8. Ensure that measurement and test equipment calibration information is documented on inspection and test records noted:
 - 3.28.1.8.1. CFN-1054, UPF Measuring and Test Equipment List
 - 3.28.1.8.2. CFN-1055, UPF M&TE Calibration Test Report
 - 3.28.1.8.3. CFN-1056, UPF Measuring and Test Equipment Checkout Log
- 3.29. Electrical Equipment Installation
 - 3.29.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.29.1.1. Check dimensions of foundations, embedment's and all features interfacing with the equipment being erected or installed. Differences shall be submitted to the Company for disposition using an approved Request for Information form.
 - 3.29.1.2. Ensure that electrical equipment is identified and tagged in accordance with project specifications.
 - 3.29.1.3. Record electrical equipment inspections on the forms noted:
 - 3.29.1.3.1. CFN -1136, UPF Electrical Equipment Inspection Record

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- 3.30. Raceways and Accessories
 - 3.30.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.30.1.1. Utilize a Company approved raceway schedule that assigns a unique identification number to each raceway and corresponds to design drawings
 - 3.30.1.2. Document inspection acceptance and release of embedded raceway prior to concrete placements.
 - 3.30.1.3. Record electrical raceway and accessory inspections on the forms noted:
 - 3.30.1.3.1. CFN -1052, UPF Raceways and Accessories Inspection Record
- 3.31. Cable Installations
 - 3.31.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.31.1.1. Utilize a Company approved cable schedule that assigns a unique identification number to each cable and corresponds to design drawings. The schedule shall include information such as material size and type, from and to links, route vias and service level.
 - 3.31.1.2. Ensure that raceway and cable vias are complete prior to pulling cable.
 - 3.31.1.3. Ensure that cable pulling lubricants are in accordance with cable manufacturer or project specifications.
 - 3.31.1.4. Record cable installation inspections on the forms noted:
 - 3.31.1.4.1. CFN -1072 UPF Cable Installation Inspection Record
- 3.32. Cable Terminations
 - 3.32.1. In addition to the requirements outlined in the technical specifications, the Seller shall:
 - 3.32.1.1. Utilize a Company approved cable termination schedule that uses the assigned unique identification number to each cable and corresponds to design drawings.
 - 3.32.1.2. Perform cable splices only at locations specifically approved by the Company.
 - 3.32.1.3. Record inspections on the forms noted:
 - 3.32.1.3.1. CFN -1070, UPF Cable Terminations Inspection Record
 - 3.32.1.3.2. CFN -1071, UPF Lifted Landed Lead Record
- 3.33. Construction Electrical Testing
 - 3.33.1. Seller Test methods, requirements and acceptance criteria not specified in project specifications, codes or standards shall be submitted to the Company for review and approval prior to implementation.
 - 3.33.2. Record test and inspections on the forms noted:
 - 3.33.2.1. CFN -1073, UPF Megger Test Inspection Record
 - 3.33.2.2. CFN -1074, UPF Transformer Test Inspection Record
 - 3.33.2.3. CFN -1075, UPF Motor Rotation Test Inspection Record
 - 3.33.2.4. CFN -1076, UPF Fiber Optic Cable Test Inspection Record
 - 3.33.2.5. CFN -1077, UPF Grounding System Test Inspection Record
 - 3.33.2.6. CFN -1078, UPF Lighting Test Inspection Record
 - 3.33.2.7. CFN -1079, UPF Electrical Equipment Inspection Record

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- 3.33.2.8. CFN -1080, UPF High Potential Test Inspection Record
- 3.33.2.9. CFN -1053, UPF Grounding Installation Inspection Record
- 3.33.2.10. CFN-1137, UPF Lighting Installation Inspection Record

4.0 TRAINING

- 4.1. Company will provide instruction at no cost to the Seller, for *General Employee Training (GET)* and other Company compliance-related training. Seller shall bear all other costs associated with having its employees attend the required training (e.g. employee pay, travel, meals, lodging, etc.).
 - 4.1.1. Seller may request the training record for Seller's employees completing Company-furnished training.
 - 4.1.2. Seller shall notify the STR of employee furloughs or terminations to allow the Company to inactivate those training records.
- 4.2. Supplemental Conditions, Attachment 1, *Training Requirements* identifies Y-12 Complex and task-specific training required for Seller personnel and lower-tier subcontractors. Complete and submit the *Request for Y-12 National Security Complex Training* form to STR to request Company-provided training. Revisions to Seller generated, task-specific documents (e.g. AHAs, plans) requires re-training of affected Seller employees. The Seller is responsible for providing personnel who are trained and qualified in the skill of their craft, discipline, or specialty. Seller is responsible for providing its personnel any/all non-Y-12 specific training required to keep its personnel current as required by Federal and State laws, codes and standards or required for the employee to be able to perform the work assigned by the Seller. Seller shall document training and provide records to the Company upon request.
- 4.3. Seller shall ensure employees are trained in the use of tools and equipment appropriate to the task and the installation of materials and equipment in accordance with manufacturer's instructions. When unique or special tools or equipment are required, the Seller shall have manufacturer or vendor manuals available on site and ensure users are trained on safe operation. Seller shall maintain a copy of manufacturers' installation instructions and train workers prior to the installation of the material or equipment. Seller shall document employee training and provide records to the Company upon request.
- 4.4. Seller shall identify training and/or awareness measures to ensure all employees are made aware of the potential environmental impacts of their work and the controls (e.g., procedures, Best Management Practices (BMPs), engineering controls) in place to minimize or eliminate negative impacts, and the potential environmental consequences of departure from specified procedures.

5.0 MATERIAL DELIVERY, STORAGE & HANDLING

- 5.1. Promptly place orders for equipment, materials, and services to complete the work. Provide delivery schedules for critical path items into the Seller's schedule.
 - 5.1.1. For items requiring Company approval of submittal, do not order item until Company provides approval.
- 5.2. Seller shall notify the Company of changes in deliveries or circumstances that affect timely delivery of equipment, materials, and services. Seller requests for an extension of time because of late delivery of equipment, material, or services shall be submitted to the Company Subcontract Administrator in writing and accompanied by documentation showing the Seller's efforts to obtain timely delivery. Time extensions to the schedule require Company approval.

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- 5.3. Seller is responsible for all costs related to the acquisition and care of all Seller-purchased non-permanent plant material and services. Deliver these items in a new or useable condition and unload, handle, protect and maintain according to manufacturer's instructions during storage and maintain the condition until utilized in performance of the work. Non permanent plant material and services is defined as that used during construction which do not become a part of the facility or plant or do not have a direct impact on the quality of completed work and/or field services. Report any damage to the Company and obtain Company approval for the corrective measure. Damaged materials shall be replaced or repaired at the Seller's expense, including expediting expenses.
- 5.4. All bills of lading for deliveries of non permanent plant material and services shall be addressed to the Seller and state the specific delivery location and point of contact. The STR is available to assist with delivery coordination.
- NOTE1: Reserved.
- NOTE2: All deliveries shall be made from the west end of the Y-12 plant. Coordinate any exceptions due to extenuating circumstances with the Company STR.
- 5.5. Reserved.
- 5.6. Reserved.
- 5.7. Identify materials delivered to Y-12 with a weather-resistant tag or label with Seller's name and contact, subcontract number, and contents.
- 5.8. Only materials and equipment used in the performance of this Subcontract may be stored at Y-12 Complex. The Seller shall be responsible for all loss, destruction, or damage to Seller material (including work in progress). Limit lay down and storage to areas designated by the Company. Seller is responsible for maintaining good housekeeping in storage and lay down areas and shall immediately correct deficiencies noted by the Company.
- 5.9. Excess material and equipment, which is government property, shall be returned to the Company for disposition. All other excess material and equipment shall be removed from the Y-12 Complex after obtaining RADCON release.
- 5.10. Seller is responsible for protection and maintenance of Government-Furnished Equipment/Material (GFE) that has been placed in the Seller's care. Damaged GFE shall be repaired or replaced at the Seller's expense, including all associated expenses.
- 5.11. Seller provided permanent plant equipment and materials are to be delivered to the site for receipt inspection by Company personnel. Permanent plant equipment is defined as equipment or components being installed as part of the project scope. Permanent plant materials is defined as materials for construction used as part of the permanent facilities or having direct impact on the quality of completed work and/or field services. Seller shall coordinate deliveries with Company to include delivery dates, storage requirements and advanced packing lists. Communication between Company and Seller and records of material receipt will include use of the forms listed below:
- 5.11.1. CFN-1043, UPF Unsatisfactory, Over, Short & Damaged Material (UOS&D)
 - 5.11.2. CFN-1046, UPF Daily Receiving Log (DRL)
 - 5.11.3. CFN-1047, UPF Material Receiving Report (MRR)
 - 5.11.4. CFN-1048, UPF Material Relocation Log

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- 5.11.5. CFN-1049, UPF Shipping Notice
- 5.11.6. CFN-1050, UPF Returnable's Log
- Requests for materials stored in the Company warehouse and documentation of transfer from the Company to the Seller shall be documented on the forms noted:
- 5.11.7. UPF Material Withdrawal Request
- 5.11.8. UPF Material Pick List
- 5.12. Seller shall have a process in place to control material and equipment released for installation, including a process to control the release of nonconforming items.
For the withdrawal of materials stored by the Company, the Seller responsibilities include advance notification of material needs through the weekly work plan. The form noted below will be used by the Seller to request items stored by the Company:
 - 5.12.1. UPF Material Withdrawal Requests
- 5.13. Seller requirements and responsibilities for the storage and control of permanent plant equipment and material in the field after withdrawal from Company storage are described below:
 - 5.13.1. Ensure that all material and equipment under its jurisdiction/control is maintained in accordance with the manufacturer's recommendation or specified requirements to ensure all warranties remain in effect, and to prevent damage or deterioration of the item.
 - 5.13.2. Identify the particular material and equipment to be maintained, the maintenance operations to be performed, and the frequency of such maintenance operations. Inspections shall be conducted, and documented results of such inspections made to ensure conformance to specified storage requirements.
 - 5.13.3. Materials and equipment shall be properly maintained by the Seller during the performance of the work to retain identification and not jeopardize its structural, mechanical, or electrical ability to function as designed once installed in its permanent location.
 - 5.13.4. Document inspections and equipment maintenance on the forms noted:
 - 5.13.4.1. CFN-1034, UPF Stored Equipment Maintenance Log
 - 5.13.4.2. CFN-1035, UPF Stored Equipment Maintenance Record
- 5.14. Reserved.
- 5.15. Reserved.

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6.0 SCHEDULE

- 6.1. Seller shall submit their Schedule with Resource Profile and Cost Loading to the Company STR within thirty (30) calendar days after Notice of Award and obtain acceptance of the schedule prior to receiving a Notice-to-Proceed from the Company. The accepted initial Schedule is the baseline schedule.
- 6.1.1. The Schedule shall include the Seller's work activity sequence in sufficient detail to provide:
- 6.1.1.1. Assurance that it encompasses the entire scope of the subcontract
 - 6.1.1.2. A basis for the Company's internal planning activities
 - 6.1.1.3. Allowance for uncertainties of weather: The basis of rain amounts, temperature, rain days, etc., will be the data from the National Climatic Data Center for Oak Ridge, Tennessee (www.NCDC.NOAA.gov). Weather conditions that lie within 30 year historical norms as measured by the National Climatic Data Center for Oak Ridge, Tennessee, shall not be considered an excusable delay.
- 6.1.2. The Company's review and acceptance of the Seller's baseline Schedule is for conformance to the Subcontract requirements only. The Seller is responsible for the schedule logic, reasonableness and feasibility; activity selections and durations; and cost and resource loading. The Seller shall provide to the Company based on the Baseline schedule information, a cost profile by month for the period of performance of the contract. Additionally, provide to the Company based on the Baseline schedule information, major commodity planned installation performance curves. Cost is defined as the approved Schedule of Values, the sum of which shall equal the total Subcontract Amount.
- 6.1.2.1. Changes to the accepted schedule sequence shall be discussed with the Company and may require a revised baseline Schedule to be submitted by the Seller for approval by the Company.
 - 6.1.2.2. The Seller may submit revisions to the baseline Schedule in the form of fragmentary networks (fragnets) to the Company for acceptance. The changes shall be clearly defined in the scope of the revision and any cost/schedule impacts to approved cost and schedule baselines.
- 6.1.3. The Schedule shall be developed utilizing any of the Primavera Project Planner suite of scheduling software products. The submittals and weekly updates shall include an electronic copy saved as P6 format.
- 6.1.4. The Schedule shall be a Critical Path Method (CPM) Schedule presented in graphic format and updated weekly. Weekly schedule updates shall show both the Baseline Schedule and current status on activities, costs, and resources. Seller shall provide copies of the Schedule updates and a 3 week look-ahead schedule for the Weekly Progress Meetings.
- 6.1.5. The Seller shall obtain approval of the Baseline Schedule before submitting the first *Application for Payment*. Company acceptance of subsequent revisions to the Baseline Schedule (re-baselining) is also required prior to approval of *Applications for Payment*.
- 6.1.6. If the Seller falls behind the accepted Schedule, risking completion of the subcontract period of performance, the Seller shall, without additional cost to the Company, take such steps as necessary to regain schedule.
- 6.1.6.1. The Company may require the Seller to submit a recovery plan and a schedule in the same format as the original schedule.

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6.1.6.2. Upon the Company's determination that the Seller is not executing the work with such diligence to ensure completion within the subcontract period of performance, the SA may provide written direction and, in addition to any other remedy, perform or have the work performed by others on behalf of the Seller and deduct the cost incurred from the subcontract value. These actions will be governed by the provisions and notice requirements in the General Terms and Conditions.

6.2. Schedule Format and Content

- 6.2.1. The Schedule shall be a CPM in Precedence Diagramming Method (PDM) format.
- 6.2.2. The Schedule shall be time-scaled and show bars for activity current status and Baseline dates from the Baseline Schedule.
- 6.2.3. The Schedule, as a minimum, shall include the following critical milestone dates:
 - 6.2.3.1. "Notice-of-Award Issue" (Day 1 on the Schedule)
 - 6.2.3.2. "Notice-to-Proceed Issue"
 - 6.2.3.3. Other milestone dates specified in the Subcontract
 - 6.2.3.4. "Construction Complete"; logically tied to demobilization
 - 6.2.3.5. "Subcontract Completion Date"; constrained to a fixed date
- 6.2.4. The Schedule shall include:
 - 6.2.4.1. Activity Number
 - 6.2.4.2. Activity Description
 - 6.2.4.3. Activity Original Duration
 - 6.2.4.4. Activity Remaining Duration
 - 6.2.4.5. Current Start or Actual Start of the activity
 - 6.2.4.6. Current Finish or Actual Finish of the activity
 - 6.2.4.7. Activity Total Float
 - 6.2.4.8. Activity Percent complete
- 6.2.5. The Seller's Schedule activities, resources, and costs shall be coded as directed by the Company. The Company will provide an electronic file of a P6 Shell and Work Breakdown Structure (WBS). The P6 Shell is a template that contains Subcontract-specific and Company's standard WBS, activity code dictionaries, and resource codes. The Seller shall use the Company-provided P6 Shell and WBS. The Seller shall modify (add to) the Company- provided P6 Shell to facilitate Seller work activities, cost, labor, and material/equipment quantities.
- 6.2.6. The Schedule level of detail shall be sufficient to provide the Company with an adequate level of information concerning training, field mobilization, submittals, procurement, and delivery of equipment, equipment installations, Lockout/Tag-outs, outages, work activities, test and checkout activities, final cleanup and demobilization, and documentation for turnover.

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- 6.2.7. Activity selection shall define discreet elements of work, whose duration shall not exceed 21 calendar days unless approved by the Company.
- 6.2.8. The critical path shall be clearly defined on the Schedule at each weekly update.
- 6.2.9. The Schedule shall not contain negative relationship lags and/or negative activity durations.
- 6.2.10. Total float is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, or both, for each activity in the Schedule. The total float is owned neither by the Company nor by the Seller.
- 6.3. Extensions of time to the Subcontract period of performance shall be granted only via Subcontract Modification.
 - 6.3.1. In the event the Company changes the Subcontract period of performance, the Seller shall submit a revised Baseline Schedule to the Company for acceptance within eight (8) workdays after receipt of the Subcontract Modification that changes the period of performance.
 - 6.3.2. Extensions of time to the Subcontract Completion Date will be granted only to the extent that activities adjusted due to a Subcontract Modification or delays affect the Seller's critical path and Subcontract Completion Date.
- 6.4. Seller shall submit for Company approval a Resource Profile and Cost Spending Plan integrated with the Baseline Schedule within thirty (30) calendar days after Notice of Award and obtain approval prior to *Application for Payments*.
 - 6.4.1. The Seller shall compile the Resource Profile and Cost Spending Plan utilizing the Company provided P6 Shell. Each schedule activity excluding milestones shall be resource and cost loaded.
 - 6.4.2. The Seller shall provide a total period and cumulative resource and cost information monthly for the entire duration of the subcontract, upon Company request.
 - 6.4.3. When the Baseline Schedule is revised and/or a Subcontract Modification significantly alters the scope of work, a revised Resource Profile and/or Cost Spending Plan shall be submitted to the Company for approval. Only Subcontract Modifications that have been authorized and approved by the Company shall be included in the revisions to the Baseline Resource Profile and Cost Spending Plan. The revision from the Subcontract Modification shall be a unique entry following the original format (Labor, Material, etc.).
 - 6.4.4. Seller shall provide a Schedule of Values from the Baseline Schedule Cost Spending Plan and correlate schedule activities with the respective Subcontract Pay Items. The cumulative Baseline Cost Spending Plan from scheduled activities shall not exceed the value of the respective Subcontract Pay Item. The total of the Schedule of Values shall equal the Subcontract value.

7.0 EARNED VALUE

- 7.1. Seller shall prepare a Schedule of Values to detail the Subcontract pay item pricing to work activities on the Seller's Schedule when the Subcontract Measurement for Payment allows for interim payments to the Subcontract Pay Item(s). The Schedule of Values will be used by the Company as the basis for approving *Applications for Payment*. Submission as follows:
 - 7.1.1. Prepare a Schedule of Values correlated to work breakdown identified in Seller's Baseline schedule.
 - 7.1.2. Submit the schedule of values to the STR for approval within two (2) weeks after approval of Seller's Baseline schedule.

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- 7.1.3. Update and incorporate each contract modification, identifying the new Subcontract Pay Item(s) and the correlating schedule of values to the STR for approval.
- 7.1.4. Utilizing the approved Schedule of Values, identify completed work and submit with the *Application for Payment* to request payment for work completed.
- 7.1.5. Forms and Content
 - 7.1.5.1. Provide schedule of value breakdown in enough detail for evaluation of payments and progress reporting with the *Applications for Payment*.
 - 7.1.5.2. Provide a separate item in the *Schedule of Values* where the *Applications for Payment* includes materials or equipment purchased or fabricated and stored, but not yet installed. The schedule of values and invoice submitted with the application for payment shall include the following when invoicing for materials or equipment purchased or fabricated and stored but not yet installed:
 - 7.1.5.2.1. Evidence that the Seller has acquired title to such material and that the material will be used to perform the work.
 - 7.1.5.2.2. Evidence of insurance or bonded warehousing for off-site storage
 - 7.1.5.3. Temporary facilities and other distributable cost items that are not direct cost of actual work-in-place may be either shown as separate items in the Schedule of Values or distributed as general overhead expense.
 - 7.1.5.4. Include preparatory work, overhead, and profit in the items to which they apply. Do not state as separate items. State the cost of bonds in a separate line item.
- 7.2. Payments for work progress will be made in accordance with the Subcontract Measurement for Payment provision in the Subcontract Pricing Section or where none are provided follow the *General Terms and Conditions* clause on Payments. Submit *Application for Payment* as follows:
 - 7.2.1. Computation for Payment
 - 7.2.1.1. Compute progress payments on the basis of completed work for each item in the approved Schedule of Values or Subcontract Measurement of Payment section. Payment will not be made for any item of completed work until requisite documentation verifying completion is submitted to and accepted by the Company.
 - 7.2.2. Submittal of *Application for Payment*
 - 7.2.2.1. A person authorized to sign legal documents on behalf of the Seller shall execute the *Application for Payment*.
 - 7.2.2.2. Entries shall match data on the Schedule of Values or Subcontract Pricing Section.
 - 7.2.2.3. Submit an *Application for Payment* with documentation and records required to verify acceptable completion of items of work.
 - 7.2.2.4. Seller shall submit each *Application for Payment* to the Company STR, Subcontract Administrator (SA), and Accounts Payable.
 - 7.2.2.5. The date for submittal of each *Application for Payment* is the third Wednesday of each month.

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- 7.2.3. Submittal of *Final Application for Payment*
 - 7.2.3.1. Upon completion of the work, submit an *Application for Payment* marked as “Final.”
 - 7.2.3.2. Provide a signed *Release and Certificate of Final Payment* form with the *Final Application for Payment*.
 - 7.2.3.3. Prior to submission of *Final Application for Payment*, Seller shall request from the STR information concerning any outstanding contract compliance items; including removal of excess material and equipment, outstanding submittals and certified payrolls, return of badges, vehicle passes and dosimetry, bioassay samples submittal, or return of Company-furnished items. Failure to resolve could delay approval of *Final Application for Payment*.
- 7.2.4. Approval of *Application for Payment*
 - 7.2.4.1. The Company will review the *Application for Payment* and make payment after verifying accuracy and completeness. Company will notify Seller of disapproved *Applications for Payment* for correction and resubmittal.

8.0 FORMS

- 8.1. The company forms are available through the procurement public website at <http://www.y12.doe.gov/business/procurement/subcontracting/provisions>.
 - 8.1.1. Reserved.
 - 8.1.2. Reserved.
 - 8.1.3. Reserved.
 - 8.1.4. *Asbestos Waste Shipment Record (UCN-17379A)*
 - 8.1.5. *Daily Summary of Force Account Work (CFN-0157)*
 - 8.1.6. *Daily Summary of Backcharge Work (CFN-0158)*
 - 8.1.7. *Homeland Security Presidential Directive HSPD-12 Badge Request Form (UCN-21519)*
 - 8.1.8. *Individual Accident/Incident Report, DOE F 5484.3*
 - 8.1.9. *Off-Shift Work Notice (CFN-0096)*
 - 8.1.10. *Release and Certificate of Final Payment (CFN-0160)*
 - 8.1.11. *Request for Inspection of Completed Work (CFN-0161)*
 - 8.1.12. *Request for Landfill Disposal (UCN-21941)*
 - 8.1.13. *Request for Y-12 National Security Complex Training (UCN-21364)*
 - 8.1.14. *Request for Y-12 National Security Complex Vehicle Pass (UCN-23155)*
 - 8.1.15. *Subcontractor Request for Y-12 National Security Complex Temporary Access and Vehicle Pass (UCN-21354)*
 - 8.1.16. *Subcontract Safety Performance Report (UCN-21439)*
 - 8.1.17. *Subcontractor Hazardous Materials Inventory Report (UCN-21445)*
 - 8.1.18. Reserved.
 - 8.1.19. *Telecommunications Proposal (UCN-16020A)*
 - 8.1.20. *Waste Container Log (UCN-21482)*
 - 8.1.21. *Waste Container Preparation and Filling Instruction/Checklist Drum (UCN-21667)*

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- 8.1.22. *Waste Container Preparation and Filling Instruction/Checklist Sealand (UCN-21670)*
- 8.1.23. *Waste Container Preparation and Filling Instruction /Checklist ST-90 Box (UCN-21668)*
- NOTE 1: Forms are available in hard copy and electronic format from the STR.
- NOTE 2: Forms referenced are to be submitted to the STR.
- NOTE 3: Reserved.

9.0 TEMPORARY FACILITIES AND WORK AREA CONTROLS

- 9.1. The following regulatory requirements are incorporated by reference:
 - 9.1.1. NFPA 70-, *National Electrical Code (NEC)*.
 - 9.1.2. NFPA 241, *Standard for Safeguarding Construction, Alterations and Demolition Operations*.
 - 9.1.3. NFPA 501A, *Standard for Fire Safety Criteria for Manufactured Home Installation, Sites, and Communities*.
 - 9.1.4. ANSI D 6.1, *Manual on Uniform Traffic Control Devices for Streets and Highways*.
 - 9.1.5. ANSI A225.1, *Anchor and support requirements*.
 - 9.1.6. MUTCO Part 5, *Manual of Uniform Traffic Control Devices*
 - 9.1.7. *International Building Code*.
 - 9.1.8. TN 1200-5, *Rules of the Tennessee Department of Health and Department of Environment and Conservation, Division of Water Supply*.
 - 9.1.9. 29 CFR Part 1926 *Subpart G, Signs, Signals, and Barricades*
- 9.2. Temporary Utilities/Company-Furnished Facilities
 - 9.2.1. Seller shall provide temporary lines and equipment to existing Y-12 electric and water utilities. The Seller is responsible for installing, maintaining, and repairing temporary lines and distribution equipment. Tie-ins and disconnecting to Y-12 utilities will be performed by the Company. Provide material and equipment in place and ready for tie-in. Remove temporary utilities upon completion of the work and after final disconnect.
 - 9.2.1.1. If Company electric power is not available, Seller shall provide portable power, as required. Provide Ground Fault Circuit Interrupters for temporary electrical lines. Perform temporary electrical work in accordance with NFPA 70 (NEC) requirements. If portable power requires a ground rod, an excavation/penetration permit is required if existing ground is not available.
 - 9.2.1.2. The Company will provide a water source at existing locations. Company-installed backflow preventers are required on all hydrants. The Seller is responsible for providing distribution line (e.g., hoses, nozzle), from the backflow preventer/water source to the work area. Seller shall provide booster pump(s) as necessary. The Seller shall provide portable water holding tanks with discharge pumps or mobile water tanker where Company does not provide a water source convenient to the Seller's work area.
 - 9.2.1.3. Discharge into Y-12 storm or sanitary sewer in accordance with regulatory permit(s). Coordinate with STR to obtain Company authorization prior to water discharges.
 - 9.2.1.4. Hard-wired telephone service is available through the Service Provider to the Y-12 Complex. The Seller is responsible for providing telephone service. Cordless telephones are prohibited.
 - 9.2.1.5. Reserved.

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- 9.2.1.6. Seller consumption of Company-provided electrical and water is at no cost to the Seller.
 - 9.2.1.7. Seller's electrical installation for temporary facilities shall pass an inspection by the Y-12 Authority Having Jurisdiction (AHJ) before tie-in to the Y-12 power distribution system or connection to a portable generator greater than 5KW.
 - 9.2.1.8. The Seller shall submit to the Company for review and approval a temporary facilities plan delineating all temporary facilities and utilities to be installed by the Seller. Submit plan(s) to the Company for review and approval by Company prior to the commencement of installation.
 - 9.2.1.9. The Seller shall maintain an up-to-date set of as-built drawings/sketches showing the installed location of all temporary utilities. The Seller shall have said drawings/sketches available for review and shall submit drawing(s)/sketches upon completion of temporary utility installation.
- 9.3. Protection of the Work Area
- 9.3.1. Seller shall provide flagging, signs, and barricades for storage areas and construction work areas and shall comply with 29 CFR 1926, Subpart G. Barrier fence shall be 48" high, orange plastic, Vallen Safety, catalog number FNC-450 or equal. Remove temporary fencing, barriers, barricades, and signs upon work completion. No post shall be installed at a depth greater than 12" without an excavation/penetration permit.
 - 9.3.2. Post a sign providing Seller's name, key personnel name(s) and telephone number(s), Company STR name and telephone number(s), and Subcontract title and number at prominent location for each work area, temporary facility, and storage area. Include contact information for off-shift and weekend hours.
 - 9.3.3. Traffic and Pedestrian Control
 - 9.3.3.1. Notify STR eight (8) workdays in advance of road closing needed to perform work.
 - 9.3.3.2. Develop a Traffic Control Plan to identify Seller traffic routes, road closures, lane closures, or potential impediments to Company emergency vehicle traffic. Submit Plan to the Company, for approval, eight (8) workdays prior to implementation. Company approval is required prior to implementation of the Plan.
 - 9.3.3.3. Provide traffic control that conforms to ANSID 6.1 and MUTCO Part 6.
 - 9.3.3.4. Provide and maintain pedestrian walkways and building access to the greatest extent possible. The area shall be flagged with orange plastic barrier fencing and applicable signs.
 - 9.3.3.5. Provide structurally sound walkways over open excavations.
 - 9.3.3.6. Provide adequate concrete barricades at open trenches adjacent to vehicle traffic. Substitutes for concrete barriers require Company approval.
 - 9.3.3.7. Provide ramping and protection for hoses and cords that cross pedestrian walkways or roads acceptable to the Company. Seller shall inspect and repair ramping and protection daily.

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- 9.4. Temporary Facilities
 - 9.4.1. Temporary structures and uses shall conform to the International Building Code. Temporary facilities include office trailers, change facilities, structures and other facilities that will be removed upon completion of the work. Company approval is required prior to the Seller setting up any temporary facilities.
 - 9.4.2. Maximum height for temporary facilities is 30 feet.
 - 9.4.3. Locate temporary facilities a minimum of 35 feet from existing buildings.
 - 9.4.4. Provide a platform, stairs, and handrails at each exterior door. Steps shall have a non-skid surface.
 - 9.4.5. Anchor and support the trailer in accordance with ANSI A225.1 and NFPA 501A. An Excavation Permit is required prior to driving anchors or ground rods at a depth greater than 12 inches.
 - 9.4.6. Provide and maintain portable fire extinguishers that are clearly identified.
- 9.5. Fire Protection
 - 9.5.1. Temporary facilities, structures and material storage areas shall comply with requirements identified in Supplemental Conditions, Part 12, Environmental Safety and Health – Fire Protection.

10.0 WASTE MANAGEMENT

- 10.1. Planning
 - 10.1.1. Seller shall submit for Company approval a Waste Management Plan (WMP) identifying each waste stream, and provide the details for the characterization, packaging and labeling, accumulation and storage, disposition, security requirements, and existing approved waste profiles for each waste stream.
 - 10.1.2. The following regulatory requirements are incorporated by reference:
 - 10.1.2.1. 29 CFR 1910.145, OSHA, Specification for Accident Prevention Signs and Tags
 - 10.1.2.2. 40 CFR 261, EPA, Identification and Listing of Hazardous Waste
 - 10.1.2.3. 40 CFR 262, EPA, Standards Applicable to Generators of Hazardous Waste
 - 10.1.2.4. 40 CFR 279, EPA, Standards for the Management of Used Oils
 - 10.1.2.5. 40 CFR 761, EPA, PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibition
 - 10.1.2.6. 49 CFR 171, EPA, General Information, Regulations, and Definitions
 - 10.1.2.7. 49 CFR 172, DOT, Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information and Training
 - 10.1.2.8. 49 CFR 173, DOT, Shippers-General; Requirements for Shipments and Packaging
 - 10.1.2.9. TDEC 1200-1-11, Hazardous Waste
 - 10.1.2.10. DOE Order, DOE O 435.1, Radioactive Waste Management

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10.2. Storage and Handling

- 10.2.1. Ensure sufficient quantities of dumpsters or containers are available.
- 10.2.2. Inspect dumpsters and containers daily to ensure they contain only proper materials. Notify the STR if unauthorized waste is found.
- 10.2.3. Store waste at a staging area until Company approval is obtained for removal from the work area.
- 10.2.4. Refer to Material Disposition Table, herein, to identify Company-provided containers for waste material storage and transportation of items for disposition by the Company.
- 10.2.5. Seller shall secure unattended containers which contain waste to prevent unauthorized dumping of material into the waste container. Seller shall verify contents of waste container. Verification of waste containers packaged inside the Protected Area or Limited Area shall be by Q-cleared individuals. Company may require Seller to develop a Waste Container Security Plan.
- 10.2.6. Waste Identification and Labeling
 - 10.2.6.1. The Company's *Request For Landfill Disposal*, UCN 21941, is required to be completed before wastes may be removed from the work area for disposal at the Y12 Landfill. The Seller shall prepare the form, sign as the "Generator", and submit to the Company. The Company will then sign the form as the "Verification Officer" and "Derivative Classifier." The Y-12 Landfill requires the Seller to submit and obtain Y-12 Lanfill approval letter of the completed form UCN 21941 six (6) workdays prior to need, before Y-12 Lanfill will accept the waste for disposal except for Special Waste.
 - 10.2.6.2. The Seller shall complete and submit to the Company the *Asbestos Waste Shipment Record* (UCN 17379A) before asbestos waste is removed from the work area. The Company will provide an Asbestos Work Authorization Number upon the Seller's request.
 - 10.2.6.3. The Seller shall label the waste package containers with assistance from the Company.
 - 10.2.6.3.1. Company RADCON will survey and analyze the waste material, verify that the waste meets the Y-12 Landfill radiological acceptance criteria, and issue a green tag before the Seller begins transferring waste for packaging, transportation, storage, and/or disposal.
 - 10.2.6.4. Labels for wrapped or drummed asbestos waste shall be red, black, and white and conform to 29 CFR 1910.145. Label bags, containers, or wrapped material shall be in accordance with 49 CFR 171 and 172 including the name of the waste generator and the location where the waste was generated. Non-friable asbestos waste shall be labeled as such.
 - 10.2.6.5. After receipt of the Y12 Landfill Approval letter, Seller shall provide a minimum of one (1) workday advance notice to the STR before removal of waste from the work area.

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10.3. Waste Segregation

- 10.3.1. Segregate wastes by type (e.g., recyclable, hazardous, special, spoils, sanitary waste, and construction debris).
- 10.3.2. The Company will assist in identifying waste type, packaging, labeling, marking, and storage requirements.
- 10.3.3. The Seller shall initiate the request for Special Waste disposal at the Y-12 Landfill through the STR. Special Waste Permits that are required will be processed by the Company and can take up to 90 calendar days to obtain.

10.4. Waste Handling

- 10.4.1. Deliver the wastes to the appropriate Y-12 Landfill as identified in the attached *Material Disposition Table*
 - 10.4.1.1. Operating hours for Industrial Landfill V and the Spoils Area, and Construction Landfill VII are from 7:00 A.M until 3:45 P.M Monday through Thursday. Asbestos, Beryllium or any other Special Waste requiring separate special cell disposal and immediate cover need to be dumped by 3:15 P.M. Landfill VII operating hours are impacted by deliveries to Landfill V.
 - 10.4.1.2. Operating hours for Landfill IV are from 7:00 A.M until 3:45 P.M. Landfill IV is available only by advance request (1 working day). All Special Waste cell disposals require scheduling a minimum of one working day in advance of delivery. Friable asbestos and BCO are normally on Tuesday.
 - 10.4.1.3. Y-12 Landfill is closed on Fridays, Saturdays, Sundays, and Holidays. (Refer to Holiday schedule in Part 1 of Supplemental Conditions.
 - 10.4.1.4. Seller shall provide a schedule for Y-12 Landfill waste shipments to the Company eight (8) workdays in advance of waste disposal.
 - 10.4.1.5. Seller should assume an average of 45 minutes from arrival to dumping at Y-12 Landfill for non-asbestos debris.
 - 10.4.1.6. Drivers shall stop at the Waste Acceptance Technicians (WAT) office and check-in. The WAT or designee will review the waste documents, inspect the incoming load and give the driver the approval to proceed as appropriate. Drivers shall follow this direction exactly. Once the incoming driver reaches the designated Landfill, look to the equipment operator for guidance on placement of the load for disposal.
 - 10.4.1.7. Smoking and other tobacco use is prohibited within the Y-12 Landfill offices.
 - 10.4.1.8. The use of cell phones while driving vehicles is prohibited at the Y-12 Landfill. Only Company approved cell phones may be used while parked at the Landfill since the landfill is located within the 229 boundary (Blue Line).
- 10.4.2. For waste disposal at the Y-12 Landfill, reduce waste to a maximum length of eight feet. Pipe diameters shall not exceed twelve inches in diameter. Oversize waste previously approved for disposal requires a two (2) workday notification to the Y-12 Landfill.

NOTE: Oversized waste may require a Special Waste Permit. Seller shall consult with the Company for determination.

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- 10.4.3. At the Y-12 Landfill, respiratory protection is required for workers who get outside the enclosed cab of a transportation vehicle hauling wastes or are within 100 feet of disposal activities identified by the Y-12 Landfill as a respiratory hazard (e.g., asbestos, beryllium, man-made fibers). All workers are required to wear hardhats, high visibility vests, safety glasses, and safety shoes while at the Y-12 Landfill and outside the enclosed cab of a transport vehicle.
- 10.4.4. Asbestos waste shall be bagged at the removal area, moved to the designated cleaning area, and bagged again (double-bagged). Large pieces shall be wrapped with two (2) layers of 6-mil polyethylene sheeting. Vacuum and wet wipe before removing bagged or wrapped waste from the regulated area. Use of a Central Collection Point requires the Seller to cover the collection area with 6-mil poly, cover the stored bags of waste with 6-mil poly, flag off the area, and install warning signs. Non-friable Category 1 or 2 asbestos waste may be hauled and dumped from trucks. Provide identification as required by regulations for vehicles transporting asbestos-containing waste. Non-friable asbestos-containing material will be accepted on the same schedule as construction debris.
- 10.4.5. Friable asbestos-containing material (ACM) insulation shall be properly packaged and labeled for delivery to Landfill V. Loose friable insulation will not be accepted for disposal. Deliver to Landfill V between the hours of 7:00 - 3:15 p.m., Tuesdays only. Seller should assume an average of 60 minutes from arrival to dumping at Y-12 Landfill V. Waste handling operation at Landfill V is suspended for a 30 minute period in the morning.
- 10.4.6. Radioactive hazardous waste as defined in 40 CFR 261, PCB waste as defined in 40 CFR 761, and free liquid wastes will not be accepted for disposal at Landfill V or VII.
- 10.4.7. The Seller shall store, package, transport and dispose of hazardous and/or radioactive waste as follows:
- 10.4.7.1. Store hazardous waste as defined by RCRA and corresponding State of Tennessee regulations in a Company-approved 90-day Accumulation Area or Satellite Accumulation Area in accordance with TDEC 1200-1-11. Seller shall obtain Company approval for hazardous waste Accumulation Area prior to beginning waste storage or staging. Seller shall coordinate with the STR to register the Accumulation Area with the Company. RCRA hazardous waste generator training is required to operate RCRA 90-day Accumulation Area per 40 CFR 262.34 (a) (4) and is the responsibility of the Seller.
- 10.4.7.2. Transport RCRA waste to the location designated by the Company for storage and management.
- 10.4.7.3. Store and package radioactive waste in Company-provided DOE-approved (e.g., 55-gallon drums, B-25 boxes) containers in accordance with DOE O 435.1. Seller shall coordinate with the STR to register Radioactive Materials Storage Area(s) (RMA) with the Company. Transportation and disposal will be by the Company.
- 10.4.7.3.1. When shipping radioactive material out of the Protective Area, prepare *Shipping Plan* (UCN-21822) for Company approval prior to transport.

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- 10.4.7.4. Store and package PCB materials in accordance with 40 CFR 761. Seller shall coordinate with the STR to register PCB Waste Storage Area(s) with the Company. Segregate wire from demolition debris and package as PCB waste if it is PCB contaminated. The Company will pick up the material at the work area.
- 10.4.8. Waste Oil, Solvents, and Sludge
 - 10.4.8.1. Package oil and solvents in DOT-specification 55 or 30-gallon polyethylene-lined bung top drums. Package sludge in DOT-approved open top drums with polyethylene lining. Leave 5 inches of headspace in each drum to allow for expansion of contents. Ensure drums are in good condition and free of dents, rust, corrosion, residue, and ensure drums are free of any labels identifying previous contents.
 - 10.4.8.2. Once the drums are filled, tighten the large bung with a bung wrench. For drums of waste oil and solvents, replace the smaller bung with a vent plug.
 - 10.4.8.3. After filling, wipe the exterior (sides and top) of drums clean of residue. Apply tag to the side of each drum. Tags shall be a Company-furnished *Hazardous Waste Identification* (UCN-2114A), for RCRA hazardous wastes, or a *Waste Identification* (UCN-2114B), for nonhazardous waste. Insert the tag in a self-adhesive vinyl envelope and attach to the side of the drum, near the top, and angle downward to keep out water. Mark the tag with permanent ink, and print all information, including the Seller's name and subcontract number. Dispose of wipes in accordance with applicable waste regulations.
 - 10.4.8.4. Segregate oil, solvent, and sludge waste by type, origin, and contaminants.
 - 10.4.8.5. If any packaging requirements are not met, the waste will not be accepted and transported by the Company.
- 10.5. Recycling
 - 10.5.1. The Seller shall make every effort to remove packing material prior to delivery of the material to the work area and recycle the material appropriately.
 - 10.5.2. Y-12 recycling: Package and transport recyclable waste to designated locations.
 - 10.5.2.1. Aluminum: Store cans in clear plastic bags for Company pick-up.
 - 10.5.2.2. Cardboard: Keep neatly stacked and dry. Transport to a Y-12 location designated by the Company.
 - 10.5.2.3. Scrap metal:
 - 10.5.2.3.1. For small quantities, palletize and band material in lengths not to exceed 6 ft. Notify the Company for pick-up.
 - 10.5.2.3.2. For larger quantities, the Company will provide and transport containers. Cut materials to lengths that will easily fit in the containers provided.
 - 10.5.2.4. Used light bulbs: Unless directed otherwise by the Waste Management Plan:
 - 10.5.2.4.1. Store light bulbs in a manner to prevent breakage.
 - 10.5.2.4.2. Segregate broken bulbs from unbroken bulbs.
 - 10.5.2.4.3. Package in structurally sound containers and keep containers neatly stacked, dry and out of the weather.

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- 10.5.2.4.4. Label “Used Lamps.”
- 10.5.2.4.5. Date the containers when the first lamp is placed inside.
- 10.5.2.4.6. Keep containers closed when not being filled.
- 10.5.2.4.7. Deliver to the Company in approved containers during building operating hours.
- 10.5.2.5. Used oil: Unless directed otherwise by the Waste Management Plan:
 - 10.5.2.5.1. Store and maintain used oils for recycle in accordance with 40 CFR 279 and EPA requirements.
 - 10.5.2.5.2. The STR will designate a Y-12 location for oil collection and storage.
- 10.5.2.6. Batteries
 - 10.5.2.6.1. Segregate by type (i.e., NiCd, Lead Acid, Hg, etc.);
 - 10.5.2.6.2. Tape terminals;
 - 10.5.2.6.3. Obtain a Green Tag;
 - 10.5.2.6.4. Place in structurally sound container;
 - 10.5.2.6.5. Label “Batteries for Recycle;” and
 - 10.5.2.6.6. Date the container.
- 10.5.2.7. Plastic Drink Bottles:
 - 10.5.2.7.1. Segregate from other wastes;
 - 10.5.2.7.2. Collect them in clear plastic bags; and
 - 10.5.2.7.3. Call Y12 Recycle coordinator for pick up.
- 10.5.2.8. Circuit Boards:
 - 10.5.2.8.1. Obtain a Green Tag;
 - 10.5.2.8.2. Place in structurally sound container;
 - 10.5.2.8.3. Label as “Circuit Boards for Recycle;” and
 - 10.5.2.8.4. Call Y12 Recycle coordinator for pick up.
- 10.5.2.9. Mercury Filled Equipment:
 - 10.5.2.9.1. Obtain a Green Tag;
 - 10.5.2.9.2. Place in plastic or metal container;
 - 10.5.2.9.3. Label as “Mercury for Recycle;”
 - 10.5.2.9.4. Date the container; and
 - 10.5.2.9.5. Call Y12 Recycle coordinator for pick up.

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10.6. Transportation

- 10.6.1. Provide containment for spoils, waste, and salvageable materials during transport. Provide covers on open top containers and trucks.
- 10.6.2. Transport asbestos waste in accordance with 49 CFR 173.216. Line the truck cargo bed with two layers of 6-mil polyethylene if waste is not individually wrapped. Vehicles shall have valid DOT registration, and drivers shall have a valid Commercial Driver's License.
- 10.6.3. Transport waste to designated Y-12 disposal facility utilizing shortest possible route.
- 10.6.4. Dump trailers are prohibited from delivering waste to the Y-12 Landfill.

10.7. Waste Control

- 10.7.1. Seller shall not remove waste from Y-12 without prior approval by the Company.
- 10.7.2. The Company is responsible for characterizing and certifying that waste is not volumetrically contaminated and does not exceed surface contamination values for release as non-radiological waste. Seller shall remove Company applied "Green Tag" on released non-radiological waste being disposed off-site after exiting Y-12 and return the green tag to the STR.

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MATERIAL DISPOSITION TABLE			
WASTE MATERIAL	CONTAINER PROVIDED BY:	TRANSPORTATION PROVIDED BY:	DISPOSAL LOCATION
NON-RADIOACTIVE CONTAMINATION (GREEN RADCON TAG REQUIRED)			
Aerosol cans –empty	Seller	Seller	Industrial Landfill V
Aerosol cans – product remaining	Seller	Seller	Seller Supplied Facility
Asbestos-Containing Material (ACM)	Seller	Seller	Industrial Landfill V
<ul style="list-style-type: none"> • Friable • Non-friable construction debris 	Seller	Seller	Construction Landfill VII
Construction/Demolition debris – wood, sheet rock, roofing, incidental metals	Seller	Seller	Construction Landfill VII
Earthen materials (Spoils) – soil, brick, concrete, masonry materials, rock, asphalt	Seller	Seller	Industrial Landfill Spoil Area
Fluorescent bulbs	Company	Seller	Bldg. 9720-58 Recycle Center
Fluorescent light ballasts:			
<ul style="list-style-type: none"> • Non-PCB (Leaking) • Non-PCB (Non-Leaking) (Recycle) • PCB 	Company	Company	Industrial Landfill V w/ Special Waste approval
	Company	Company	Bldg. 9720-58 Recycle Center
	Company	Company	Waste Accumulation Area or 9720-58 Recycle Center
Batteries			
<ul style="list-style-type: none"> • Lead Acid / NiCd • Mercury/Lithium/Silver • Alkaline 	Seller Seller Seller	Company Company Seller	Bldg. 9720-58 Recycle Center Bldg. 9720-58 Recycle Center Construction Landfill VII
Glass	Seller	Seller	Industrial Landfill V
Gray water (i.e. shower & wash water)	Seller	Seller	Sanitary Sewer w/ Environmental Compliance Department approval
Incandescent bulbs	Company	Seller	Bldg. 9720-58 Recycle Center
Mercury (Switches & Batteries)	Company	Company	Waste Operations 90-Day Yard or 9720-58 Recycle Center
PCB-contaminated bulk product:			
<ul style="list-style-type: none"> • PCB level <2 PPM • PCB level ≥ 2 and <50 PPM • PCB level ≥ 50 PPM • PCB level ≥ 50 PPM (not suitable for landfill disposal) • Metals w/ PCB Paint < 50 PPM • Metals w/ PCB Paint ≥ 50 PPM • Metals w/ PCB Oil contamination ≥ 50 PPM or 10ug/100cm 	Seller Seller Seller Company Seller Seller Seller	Seller Seller Seller Company Seller Seller Seller	Same as non-PCB Industrial Landfill V w/ Special Waste approval Industrial Landfill V w/ Special Waste approval Waste Operations 90-Day Yard Company Approved Recycle Facility Industrial Landfill V w/ Special Waste approval Decontamination per 40 CFR 761 & disposed at Industrial Landfill V w/ Special Waste approval or recycle w/ Environmental Compliance Department approval

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MATERIAL DISPOSITION TABLE			
WASTE MATERIAL	CONTAINER PROVIDED BY:	TRANSPORTATION PROVIDED BY:	DISPOSAL LOCATION
PCB Oily Rags and Wipes • Chemicals	Company	Company	Offsite Facility
Sanitary waste • Plastic, Paper, Food waste • Portable Toilets and Holding Tanks	Company Company	Company Company	Industrial Landfill V Commercial offsite disposal
Scrap metal, including lead	Company	Company	New Salvage Yard metal recycle area
Used oil: • No Rad Added Certification • PCB Oil • Detectable uranium (below yellow tag)	Company Company Company	Company Company Company	Waste Operations 90-Day Yard Waste Operations 90-Day Yard Company Storage
Wiring (non-PCB, non-ACM)	Company	Company	Salvage Yard metal recycle area
Wood (unpainted, untreated, trees & vegetation)	Seller	Seller	Natural Resources Recovery at Solway
RADIOACTIVE-CONTAMINATED MATERIALS (Yellow RADCON Tag)			
ACM Materials	The Seller shall package radioactive contaminated wastes in Company-furnished DOT containers for transportation. The Company will transport radioactive contaminated waste.		
PCB Materials			
Construction Debris			
Roofing			
Scrap metal			
Wood			
Aerosol cans			
Light bulbs			

NOTE: Contact STR if materials not identified in this table are encountered during the performance of the work.

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11.0 RADIOLOGICAL CONTROL (RADCON)

11.1. Regulatory Requirements

The following regulatory requirements are incorporated by reference:

- 11.1.1. American Standard for Testing and Materials (ASTM) D-2986-95a, Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test.
- 11.1.2. 10 CFR 835, Occupational Radiation Protection

11.2. Definitions

- 11.2.1. Radiological Work Permit (RWP): A Company-issued permit (administrative control), used to maintain the radiological exposure of personnel as low as reasonably achievable.
- 11.2.2. Surface Contamination: Unwanted radioactive material, which is deposited on the surfaces of structures, objects, or personnel.
- 11.2.3. Radiological Buffer Area: An area established to provide a secondary boundary to minimize the spread of contamination and /or to limit external exposure.
- 11.2.4. Radioactive Material Area: An area accessible to individuals, in which items or containers of radioactive material exist.
- 11.2.5. Radiological Area: Area where radioactive contamination, airborne radioactive material or radiation exists at levels where work controls are necessary.

11.3. Submittals

- 11.3.1. Submit to Company STR for approval a list of personnel who have received Radiological (RAD) Worker training from a Company-approved training program. Provide employee's full name, job title, title of course(s), training date, and training organization. Include a copy of the training certificate(s). Successful completion of a written Company test, dress out, and practical exercise is required by the Company in addition to training prior to performing RAD work.
- 11.3.2. Radioactive Material License(s) for sources (e.g., soil density gauges, radiography).
- 11.3.3. Radioactive Material License(s) for laboratories used to conduct geotechnical soils testing and analyses.
- 11.3.4. Training documentation for source users (e.g., soil density gauges, radiography sources)
- 11.3.5. Radioactive Source Request to include manufacturer's data, inspection, and maintenance documentation for radiological sources.

11.4. Delivery, Storage, and Handling

- 11.4.1. Remove packaging to the maximum extent possible prior to transporting material into radiological areas or Radiological Buffer Areas established for contamination control.
- 11.4.2. Minimize radiologically contaminated waste by segregating from non-contaminated waste.
- 11.4.3. Material and Equipment Surveys
 - 11.4.3.1. The Company will survey Seller's tools, material, and equipment upon arrival at Y-12 to ensure they meet the standards for radioactivity. Seller must clean equipment prior to arrival. Equipment shall not have a heavy layer of grease, dirt, or debris that may hinder the radiological surveys.

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- 11.4.3.2. Upon completion of the work and prior to removing from radiological areas, Radiological Buffer Areas established for contamination control, or from Y-12, the Company will survey Seller's tools, materials, and equipment to ensure they have not become contaminated. If contamination is encountered, Seller shall perform decontamination under the Company direction. The Company will not decontaminate nor reimburse the Seller for tools or equipment valued at less than \$200 which became contaminated.
 - 11.4.3.2.1. Items, which are releasable, will be green tagged; items not releasable will be yellow tagged by the Company.
 - 11.4.3.2.2. If Seller elects to take possession of contaminated items, the Seller shall provide a copy of appropriate license(s) that authorizes them to possess such material, to the Company.

11.5. Materials and Equipment

11.5.1. Company-furnished items:

- 11.5.1.1. Coveralls, gloves, shoe covers, and other protective clothing needed to work in radiologically contaminated areas (excluding safety shoes, glasses, and hardhat);
- 11.5.1.2. Respirators and cartridges;
- 11.5.1.3. Storage containers for radiologically contaminated waste;
- 11.5.1.4. Radiation dosimeters;
- 11.5.1.5. Personnel monitoring station and equipment to perform required monitoring;
- 11.5.1.6. Change facilities including showers and lockers; and
- 11.5.1.7. Characterization of the work area.

11.5.2. Seller-furnished items:

- 11.5.2.1. Safety shoes (shoes cannot leave the radiological area until decontaminated);
- 11.5.2.2. Vacuum cleaners equipped with HEPA filters;
- 11.5.2.3. Portable electric hand tools equipped with HEPA filters; and
- 11.5.2.4. Industrial Safety Personal Protective Equipment (e.g., hardhats, glasses, welder aprons).
 - 11.5.2.4.1. HEPA filters shall provide an efficiency of not less than 99.97% when challenged with 0.30-micrometer particle size aerosol.

- 11.5.3. The Seller shall take precautions to ensure equipment does not become contaminated (e.g., sleeve hoses, place plastic over surfaces, sequence work activities). Contaminated items cannot leave the radiologically controlled area.

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11.5.4. Radioactive Sources:

- 11.5.4.1. Seller shall submit a written request to the Company, for approval, a minimum of four (4) workdays before any exempt, non-exempt or licensed radioactive source is brought to Y-12, including sources used in radiography equipment and moisture density gauges. The request shall contain:
 - 11.5.4.1.1. Description of source, including radionuclide(s), activity, and contact dose rate,
 - 11.5.4.1.2. Manufacturer and unique identification number,
 - 11.5.4.1.3. Current leak test report,
 - 11.5.4.1.4. A copy of license(s) permits, operating procedures, and emergency procedures,
 - 11.5.4.1.5. List of authorized users, training records, and contact phone number,
 - 11.5.4.1.6. Storage location,
 - 11.5.4.1.7. Date the source will be arriving and the date it is to leave Y-12,
 - 11.5.4.1.8. Seller's Source Custodian and telephone number,
 - 11.5.4.1.9. Subcontract number, and
 - 11.5.4.1.10. A description of the work and how the source will be used.
- 11.5.4.2. The Company will provide a Source Custodian to act as a liaison between Seller and STR, and to ensure Company radioactive source control procedures are followed. Specific Y-12 procedures will be provided to the Seller as a part of the Company approval process.
- 11.5.4.3. While the source is at Y-12, it shall have inspection and maintenance performed as described in any license, procedure, or manufacturer's document, and the records shall be made available to the Company for review upon request.
- 11.5.4.4. The Seller shall notify the Company STR, both verbally and in writing, when the source is brought to and removed from Y-12.

11.6. Radiological Work Preparation

- 11.6.1. Work will be performed within the Y-12 Controlled Area as defined in 10 CFR 835, Occupational Radiation Protection.
- 11.6.2. Radiological Worker Training:
 - 11.6.2.1. Seller's personnel shall complete a 20-hour Radiological Worker II Training Program from a Company approved program and pass an examination (written test and dress-out practical exercise). Retraining is required every two (2) years.

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- 11.6.3. Radiological Monitoring
 - 11.6.3.1. A baseline bioassay sample is required for all Seller personnel prior to working in radiological areas governed by a RWP. An exit bioassay sample is required for those who participated in the bioassay program upon completion of the RWP work. Depending upon the RWP, bioassay sample could include urinalysis as well as fecal sampling. Seller shall request Company-provided bioassay labels one (1) week in advance of termination or completing RWP work. Seller shall submit its employees bioassay sample(s).
 - 11.6.3.2. The Company will notify the Seller if chest counting is required. Seller shall schedule chest counting four (4) workdays in advance. Counting will require two (2) hours per employee.
 - 11.6.3.3. Seller employees who enter radiological areas, Radiological Buffer Areas, or Radiological Material Areas will be issued dosimetry badges by the Company before the start of work. Employees must wear dosimetry badges in plain view above the waist at all times while working in a radiological controlled area. Seller shall collect and return all issued Thermoluminescent Dosimeters (TLDs) to the STR at the end of the last workday of each calendar quarter, at which time new TLDs will be issued, and at the end of the RWP work. If any employee fails to return their TLD and/or provide a required bioassay sample, the Seller's Application for Payment(s) could be delayed and/or the employee's access may be restricted until the issue is resolved.
 - 11.6.3.4. The Company will maintain personnel exposure records for Seller employees working at Y-12.
 - 11.6.3.5. The Company will provide an annual radiation monitoring report to each Seller employee who received radiation exposure monitoring.
- 11.6.4. Radiological Work Permit (RWP)
- 11.6.5. The Seller shall request an RWP four (4) workdays before the scheduled work activity. The Seller's Work Plan and AHA shall accompany the request for an RWP. The RWP shall be posted by the Seller at Boundary Control Stations/Access Points before access is permitted to the radiological area.
- 11.6.6. The RWP will identify specific work requirements including work instructions, PPE, dosimetry, and training. Personnel entering the work area shall sign the RWP after having read and understood completely the RWP. Signing the RWP signifies that the person has read the RWP, understands its requirements, and agrees to follow the requirements.
- 11.6.7. A Pre-Job Brief on the RWP and subsequent revisions shall be given by the Seller to personnel prior to start of work for those signing onto the RWP. Seller shall document the Pre-Job Brief.
- 11.6.8. Equipment Testing
 - 11.6.8.1. Equipment having a HEPA filter shall be tested in accordance with requirements identified in Supplemental Conditions, Part 12, Environmental, Safety and Health – Equipment and Tools.

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- 11.6.9. Radiological Area – Dress Out Not Required
 - 11.6.9.1. Review radiological hazards as identified in the RWP with the Company.
 - 11.6.9.2. Maintain a log of personnel entering the radiological area, and if required by the RWP, record the entry and exit times.
 - 11.6.9.3. Eating, drinking, using tobacco or chewing gum is not allowed.
 - 11.6.9.4. Enter only to perform required work.
 - 11.6.9.5. Personnel monitoring is required before leaving the area.
- 11.6.10. Radiological Area – Dress Out Required
 - 11.6.10.1. Review radiological hazards as identified in the RWP with the Company.
 - 11.6.10.2. Maintain a log of personnel entering the radiological area, and if required by the RWP, record the entry and exit times.
 - 11.6.10.3. Eating, drinking, using tobacco or chewing gum is not allowed.
 - 11.6.10.4. Enter only to perform required work.
 - 11.6.10.5. Personnel monitoring is required before leaving the area.
 - 11.6.10.6. Wear PPE as required on the RWP, which typically includes:
 - 11.6.10.6.1. No personal outer clothing,
 - 11.6.10.6.2. Anti-C coveralls,
 - 11.6.10.6.3. Shoe covers and booties,
 - 11.6.10.6.4. Work boots (provided by Seller),
 - 11.6.10.6.5. Surgeon gloves,
 - 11.6.10.6.6. Anti-C gloves,
 - 11.6.10.6.7. Hood,
 - 11.6.10.6.8. Dedicated hardhat (provided by Seller), and
 - 11.6.10.6.9. Respiratory protection for certain work activities.
- 11.6.11. Containment of Dust and Debris
 - 11.6.11.1. The following is required for contaminated work areas:
 - 11.6.11.1.1. Equip portable hand tools used to drill, cut, or otherwise disturb contaminated materials with a HEPA-filtered exhaust system.
 - 11.6.11.1.2. Implement dust-suppression techniques. Dry sweeping (using compressed air for cleaning or other dust-creating activities are prohibited).
 - 11.6.11.1.3. Discard HEPA filters and respirator cartridges as contaminated waste.
- 11.7. Company-furnished RADCON Services:
 - 11.7.1. Radiological Work Permit (RWP),
 - 11.7.2. Radiological Control Technician(s),
 - 11.7.3. Radiological surveys and evaluations,
 - 11.7.4. Bioassay sampling,
 - 11.7.5. Air monitoring,
 - 11.7.6. Laundry service for PPE and cleaning service for Company-furnished respirators,

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- 11.7.7. Personnel exposure records,
- 11.7.8. Survey and tagging of tools/equipment brought to and removed from Y-12, and
- 11.7.9. Source custodian liaison for any radioactive source brought to Y-12.
- 11.8. Characterization During Demolition
 - 11.8.1. During demolition, previously inaccessible areas may be uncovered. Consistent with the AHA process, the Seller shall stop demolition and notify the STR to allow additional radiological characterization by the Company in areas where radiological contamination may be present.
- 11.9. Personnel Monitoring
 - 11.9.1. Each Seller worker exiting the radiological areas established for contamination control into a less restrictive area shall self-monitor. Monitoring requirements are provided during the Radiological Worker II Training. Follow posted instructions and utilize the Company-provided equipment.
 - 11.9.1.1. A whole body frisk requires an estimated time of 15 minutes.
 - 11.9.1.2. A hand and foot frisk requires an estimated time of 5 minutes.
 - 11.9.2. Contamination is not expected to be found during monitoring. If contamination is found, remain at the monitoring station and notify the Company RADCON technician for further instructions. Decontamination must be completed before exiting the monitoring station. After being allowed to exit the radiological area, notify the STR about the occurrence, in accordance with Supplemental Conditions, Part 12, Environmental, Safety and Health-Reporting.
- 11.10. Respiratory Protection
 - 11.10.1. The Company will provide respiratory protection for work under an RWP. The RWP and Company monitoring will determine when respiratory protection is required. Seller personnel wearing Company-respirators shall be Company trained and fit tested.

12.0 ENVIRONMENTAL, SAFETY AND HEALTH (ES&H)

- 12.1. Overview
 - 12.1.1. Seller shall perform work in a manner that provides safe working conditions and protects workers' health, minimizes potential risk, protects the public and the environment, prevents pollution, complies with applicable regulations, and continuously seeks opportunities to improve performance.
 - 12.1.2. Seller shall comply with 10 CFR 851, Worker Safety and Health Program. Sellers and its lower tier subcontractors are subject to civil penalties for failure to comply with applicable 10 CFR 851, Worker Safety and Health Program requirements.
 - 12.1.3. Seller shall establish and submit a written description of a medical program and provide the Company with the Seller's principal medical provider. Seller shall provide a program under the direction of a licensed physician meeting the credentials required by 10 CFR 851 Appendix A.8(b) and personnel providing health services meeting the credentials required by 10 CFR 851 Appendix A.8(c). The Seller's occupational medicine program contents will be based on the Seller's scope of work and associated hazards.

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- 12.1.4. Reserved.
 - 12.1.5. The Company will perform periodic ES&H assessments. The Seller shall provide timely, complete and open access to its safety process, files, records, etc., and participate in these assessments as requested. Corrective actions by the Seller shall be taken in a timely manner if issues or deviations from requirements are identified.
- 12.2. Integrated Safety Management (ISM)
- 12.2.1. Seller shall use ISM per Department of Energy Acquisition Regulation, DEAR 970.5223-1, Integration of environment, safety, and health into work planning and execution to establish a systematic approach to incorporate ES&H requirements into all work. For the purpose of ISM, the term “safety” encompasses environmental protection, safety and health, and includes pollution prevention, waste minimization, and resource conservation. ES&H management activities shall include the five core functions.
 - 12.2.1.1. Define the Scope of Work.
 - 12.2.1.2. Analyze the Hazards and Risks.
 - 12.2.1.3. Develop and implement hazard controls.
 - 12.2.1.4. Perform work within the controls.
 - 12.2.1.5. Provide feedback and continuous improvement.
 - 12.2.2. Seller shall incorporate the five core ISM functions into the Seller's ES&H Program and the Activity Hazards Analysis (AHA). The order of precedence of implementing hazard controls is (1) substituting less hazardous processes, materials, or equipment; (2) engineering controls; (3) administrative controls; and (4) personal protective equipment (PPE).
- 12.3. Clean Water Compliance
- 12.3.1. A Best Management Practices (BMP) plan is required from Seller for all construction and demolition work and shall comply with environmental requirements that protect water and with 40 CFR 122.22(k) and the Y-12 National Pollutants Discharge Elimination System (NPDES) permit. Additionally, the BMP shall be submitted to the STR for approval prior to beginning work (the BMP may be a section in the ES&H Plan) and, as applicable, incorporate storm water pollution prevention measures. The BMP shall consider the following:
 - 12.3.1.1. Work area(s) shall be maintained in a neat and orderly condition.
 - 12.3.1.2. Plug all drain openings inside the building being demolished before contaminants are removed and demolition begins. Safeguard building floor drains adjacent to work areas from debris.
 - 12.3.1.3. Cover storm drains adjacent to the work area with filter fabric or other appropriate materials to protect storm drains from debris and sediment generated by work activities.
 - 12.3.1.4. Implement and maintain erosion controls (e.g., straw bales, silt fence, sandbags) and stabilize bare soil areas within the work area.
 - 12.3.1.5. Cover contaminated waste stockpiles to protect against migration from wind and storm water.
 - 12.3.1.6. Protect raw materials and new supplies from storm water and high winds.
 - 12.3.1.7. Identify potential sources of storm water pollution and inspect periodically (e.g., transformers, generators, equipment, etc.) and correct any deficiencies.

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- 12.3.1.8. After removal of the demolition debris and/or completion of construction activities, remove sediment, paint chips, and other wastes that have been collected near drains and erosion control devices.
- 12.3.1.9. Immediately report leaks or spills to the Y-12 Plant Shift Superintendent (PSS) office and to the STR (Refer to Reporting Section in Part 12). The Seller shall maintain a container marked "Spill Kit" with absorbent materials and other controls consistent with the hazardous materials present at the work area to assist in spill control.
- 12.3.1.10. Train workers in the proper implementation of the BMP controls. Reference Attachment 1, Training Requirements.
- 12.3.1.11. Provide secondary containment for stored hazardous or regulated liquids and solid items that may contain these liquids (e.g., batteries, motors).
 - 12.3.1.11.1. Secondary containment should be set up on level ground and be able to hold 100% of the volume of the largest container or 10% of the total volume of all the containers whichever is larger.
 - 12.3.1.11.2. Secondary containment shall be leak tight and compatible with the contents of the containers.
 - 12.3.1.11.3. A minimum of 20 mil plastic shall be used when half pipe berm and plastic liner is used for secondary containment. Berm shall have 6 inches height or higher.
 - 12.3.1.11.4. A 6ounce or more geotextile mat shall be used under the plastic liner.
- 12.3.1.12. Equipment with free oils or oil residue that could become mobile if exposed to rain water should be wrapped in plastic if stored outside.
- 12.3.1.13. Equipment and/or material with metal dust, loose rust, metal cuttings and/or other pollutants which are to be stored outside shall have the pollutants removed and/or be wrapped/covered (plastic wrap) in a manner to prevent dissemination of the pollutants into the environment.
- 12.3.2. Water discharge authorization shall be obtained from the Company prior to discharging water to the storm or sanitary sewer system, unless specifically permitted.
- 12.3.3. Where work area involves disturbance of one (1) acre or more, Seller shall employ Competent Person to ensure compliance with provisions of the TDEC General Storm Water Permit. Competent Person shall have completed eight (8) hour Tennessee Erosion Prevention and Sediment Control Training and Certification Program for construction sites
- 12.4. Orientation
 - 12.4.1. Before starting work, provide an orientation of the Workplace Substance Abuse Program, ES&H Program, the work-specific ES&H Plan and other plans, Hazard Communication, Hazardous Materials Information System (HMIS), and AHA to on-site employees. Seller shall document orientation and provide records to the Company upon request.
 - 12.4.2. Inform workers of their rights and responsibilities, including posting the DOE Worker Protection Poster (DOE Form 5483.1, Occupational Safety and Health Protection) at visible and prominent locations to inform on-site employees of the reporting process

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- 12.4.3. Stop/Suspend Work Authority:
- 12.4.3.1. Ensure that all workers are informed to stop/suspend work, without reprisal by management or co-workers, when a situation exists which will place them, their co-worker(s), or the environment in imminent danger. The Seller is responsible for costs incurred when either the Seller or the Company stops or suspends work under this provision. The Seller shall not be entitled to an adjustment under any clause in the General Terms and Conditions.
- 12.4.4. "Stop Work" is defined as stopping the task or activity that poses imminent danger to human health and/or the environment. The resolution of a "Stop Work" requires the Seller to write a corrective action plan and submit it to the Company for approval. Resumption of work requires Company authorization.
- 12.4.5. "Suspend Work" is defined as temporarily interrupting a specific activity that could pose an unsafe situation to human health or the environment. The resolution of a "Suspend Work" requires authorization from the STR. The Seller's Safety Representative shall ensure that resolution of the issue(s) has occurred and the work can be performed safely.

NOTE: These provisions do not modify or alter any provisions in the *General Terms and Conditions*.

12.5. Qualifications

- 12.5.1. Qualified Competent Persons (e.g., scaffolding, excavation, lead, asbestos work) shall be identified by the Seller in ES&H Plan or permits. Seller shall identify Competent Person, TDEC-certified for erosion prevention and sediment control for ground disturbance of one (1) acre or more in size. Competent Persons shall remain on site when work requiring their review is in progress.
- 12.5.2. Seller shall designate an electrical inspector, qualified in accordance with NFPA 70 and 70E, to ensure compliance for all electrical work.
- 12.5.3. Certify by name that workers and Competent Person are qualified and maintain training records and certifications. Seller shall provide copies of records and certifications to the Company upon request. Supervisor personnel shall receive the same training as the workers being supervised and their training and certifications shall be documented.

12.6. Regulatory Requirements

- 12.6.1. The following regulatory requirements are incorporated by reference and do not release Seller of all other applicable regulatory requirements:
- 12.6.1.1. 10 CFR Part 830, Nuclear Safety Management.
- 12.6.1.2. 10 CFR Part 835, Occupational Radiation Protection.
- 12.6.1.3. 10 CFR Part 850, Chronic Beryllium Disease Prevention Program, Final Rule
- 12.6.1.4. 10 CFR Part 851, Worker Safety and Health Program.
- 12.6.1.5. 10 CFR 851, Worker Safety and Health Program, including Appendix A, Subparts 2 and 3, "Fire Protection" and "Explosives Safety", respectively;
- 12.6.1.6. 29 CFR Part 1904, Recording and Reporting Occupational Injuries and Illnesses.
- 12.6.1.7. 29 CFR Part 1910, Occupational Safety and Health Standards, including referenced codes and standards.
- 12.6.1.8. 29 CFR Part 1910.134, Respiratory Protection.

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- 12.6.1.9. 29 CFR Part 1910.145, Specification for Accident Prevention Signs and Tags.
- 12.6.1.10. 29 CFR Part 1910.146, Permit-Required Confined Spaces.
- 12.6.1.11. 29 CFR Part 1910.147, The Control of Hazardous Energy (Lockout/Tag-out).
- 12.6.1.12. 29 CFR Part 1910.269, Electric Power, Generation, Transmission, and Distribution.
- 12.6.1.13. 29 CFR Part 1910.333, Working On or Near Exposed De-energized Parts.
- 12.6.1.14. 29 CFR Part 1910.1200, Hazard Communication.
- 12.6.1.15. 29 CFR 1910 Subpart E, Exit Routes, Emergency Action Plans, and Fire Prevention Plans
- 12.6.1.16. 29 CFR 1910 Subpart F, Powered Platforms, Manlifts, and Vehicle-Mounted Work Platforms.
- 12.6.1.17. 29 CFR 1910 Subpart H, Hazardous Materials
- 12.6.1.18. 29 CFR 1910 Subpart J, General Environmental Controls
- 12.6.1.19. 29 CFR 1910 Subpart L, Fire Protection
- 12.6.1.20. 29 CFR 1910 Subpart N. Materials and Storage
- 12.6.1.21. 29 CFR 1910 Subpart P, Hand and Portable Powered Tools and Other Hand-Held Equipment
- 12.6.1.22. 29 CFR 1910 Subpart Q, Welding, Cutting, and Brazing
- 12.6.1.23. 29 CFR 1910 Subpart S, Electrical
- 12.6.1.24. 29 CFR Part 1926, Safety and Health Regulations for Construction, including referenced codes and standards.
- 12.6.1.25. 29 CFR Part 1926.23, First Aid and Medical Attention.
- 12.6.1.26. 29 CFR Part 1926.55, Gases, Vapors, Fumes, Dusts, and Mists.
- 12.6.1.27. 29 CFR Part 1926.62, Lead.
- 12.6.1.28. 29 CFR Part 1926.101, Hearing Protection.
- 12.6.1.29. 29 CFR Part 1926.1101, Asbestos Standard.
- 12.6.1.30. 29 CFR Part 1926.1126, Chromium VI
- 12.6.1.31. 29 CFR Part 1926 Subpart C, General Safety and Health Provisions
- 12.6.1.32. 29 CFR Part 1926 Subpart D, Occupational Health and Environmental Controls
- 12.6.1.33. 29 CFR Part 1926 Subpart E, Personal Protective and Life-Saving Equipment
- 12.6.1.34. 29 CFR Part 1926 Subpart F, Fire Protection and Prevention
- 12.6.1.35. 29 CFR Part 1926 Subpart H, Materials Handling, Storage, Use, and Disposal.
- 12.6.1.36. 29 CFR Part 1926 Subpart I, Tools-Hand and Power
- 12.6.1.37. 29 CFR Part 1926 Subpart J, Welding and Cutting
- 12.6.1.38. 29 CFR Part 1926 Subpart K, Electrical
- 12.6.1.39. 29 CFR Part 1926 Subpart L, Scaffolding
- 12.6.1.40. 29 CFR Part 1926 Subpart M, Fall Protection

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- 12.6.1.41. 29 CFR Part 1926 Subpart N, Cranes, Derricks, Hoists, Elevators, and Conveyors
- 12.6.1.42. 29 CFR Part 1926 Subpart P, Excavations
- 12.6.1.43. 29 CFR Part 1926 Subpart T, Demolition
- 12.6.1.44. 29 CFR Part 1926 Subpart Z, Toxic and Hazardous Substances
- 12.6.1.45. 40 CFR Part 61, National Emission Standards for Hazardous Air Pollutants, Subpart A - General Provisions, and Subpart M - National Emission Standards for Asbestos
- 12.6.1.46. 40 CFR Part 82, Protection of Stratospheric Ozone
- 12.6.1.47. 49 CFR Part 106-180, Hazardous Materials Transportation Regulations
- 12.6.1.48. 49 CFR Part 325-399, Federal Motor Carrier Safety Regulations
- 12.6.1.49. 40 CFR Part 763, Asbestos Hazard Emergency Response Act
- 12.6.1.50. TN 1200-1-20, Rules of the Tennessee Department of Health and Department of Environment and Conservation, Asbestos Accreditation Requirements
- 12.6.1.51. TN 1200-3, Rules of the Tennessee Department of Health and Department of Environment and Conservation, Division of Air Pollution
- 12.6.1.52. TN 1200-4, Rules of the Tennessee Department of Health and Tennessee Department of Environment and Conservation, Division of Water Pollution Control
- 12.6.1.53. TN 1200-4-10, Rules of the Tennessee Department of Health and Tennessee Department of Environment and Conservation, National Pollutant Discharge Elimination System (NPDES) General Permits
- 12.6.1.54. Tennessee Code Annotated Title 4, Chap. 3, Part 14, Titles 62 and 63
- 12.6.1.55. American Conference of Government Industrial Hygienists (ACGIH) 0022, Threshold Limit Values (TLV) for Chemical Substances and Physical Agents, and Biological Exposure Indices (BEI)
- 12.6.1.56. ANSI B30 Series, Safety Standards for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks and Slings
- 12.6.1.57. ANSI B56 Series, Safety Standards for Powered Industrial Trucks
- 12.6.1.58. ANSI CGA G7.1, Commodity Specification for Air
- 12.6.1.59. ANSI Z49.1, Safety in Welding, Cutting and Allied Processes
- 12.6.1.60. ANSI Z87, Practice for Occupational and Educational Eye and Face Protection
- 12.6.1.61. ANSI Z88.2, Respiratory Protection
- 12.6.1.62. ANSI Z88.6, Respiratory Protection – Respirator Use – Physical Qualifications for Personnel
- 12.6.1.63. ANSI Z88.10, Respirator Fit Test Methods
- 12.6.1.64. ANSI Z89.1, Protective Headwear for Industrial Workers
- 12.6.1.65. ANSI Z117.1, Safety Requirements for Confined Space
- 12.6.1.66. ANSI Z359.1, Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
- 12.6.1.67. ASME B30.5 Mobile and Locomotive Crane

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- 12.6.1.68. ASME B30.23 Personnel Lifting Systems
- 12.6.1.69. ASME B30.26 Rigging Hardware
- 12.6.1.70. ASME N510-1989 Testing of Nuclear Air Treatment Systems
- 12.6.1.71. ASTM D2986 Method for Evaluation of Air Assay Media by the Monodisperse DOP Smoke Test
- 12.6.1.72. ASTM D3659, Standard Test Method for Flammability of Apparel Fabrics by Semi-Restraint Method.
- 12.6.1.73. ASTM F887, Standard Specifications for Personal Climbing Equipment
- 12.6.1.74. ASTM F1506, Standard Performance Specification for Flame Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards
- 12.6.1.75. ASTM-F2412, Standard Test Methods for Foot Protection and ASTM-F2413 Standard Specification for Performance Requirements for Foot Protection
- 12.6.1.76. DEAR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution
- 12.6.1.77. DOE Order 420.1B, Facility Safety
- 12.6.1.78. FMCSR, Federal Motor Carrier Safety Regulations
- 12.6.1.79. National Fire Protection Association (NFPA) Codes and Standards
- 12.6.1.80. NFPA 1, Uniform Fire Code
- 12.6.1.81. NFPA 70, National Electrical Code
- 12.6.1.82. NFPA 70E, Standard for Electrical Safety in the Workplace
- 12.6.1.83. NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations
- 12.6.1.84. NFPA 701, Methods of Flame Propagation of Textiles and Films to Protect Personnel and Property During Spark or Flame Producing Work
- 12.6.1.85. NIOSH 582 Sampling and Evaluating Airborne Asbestos Dust
- 12.6.1.86. NIOSH Method 7400 from the NIOSH Manual of Analytical Methods
- 12.6.2. Some of the requirements listed or contained elsewhere in the Supplemental Conditions are more restrictive for construction activities (e.g., American Conference of Government Industrial Hygienists (ACGIH), Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEI) and ANSI Z88.2, Respiratory Protection). The Seller is responsible to execute the more restrictive requirements.
- 12.6.3. The Seller shall have copies or access to current applicable codes and standards.

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12.7. Submittals

12.7.1. Prior to the start of work, submit the following for Company approval. The Company will consider Seller's request to omit submittals, which are not pertinent, based on hazards that will not be encountered and Seller's methods of accomplishments. Seller requirements for safety plans described herein may be satisfied with an appropriate section in its ES&H Plan. The Seller shall flow all ES&H requirements to lower tier subcontractors, suppliers and visitors and acknowledge its responsibility for the performance of its visitors, suppliers and subcontractors of every tier.

- 12.7.1.1. Corporate ES&H Program
- 12.7.1.2. ES&H Plan
- 12.7.1.3. AHA
- 12.7.1.4. Personal Safety Systems
- 12.7.1.5. Medium and Critical Lift and Haul Plans
- 12.7.1.6. Reserved
- 12.7.1.7. Crane Operator Qualifications and Training
- 12.7.1.8. Competent Person Rigger Qualifications and Training
- 12.7.1.9. Person in Charge Qualifications and Training
- 12.7.1.10. Project Rigging Engineer
- 12.7.1.11. ES&H Representative's qualifications
- 12.7.1.12. Electrical Safety Program (Installation and Maintenance Operations)
- 12.7.1.13. Asbestos Work Plan
- 12.7.1.14. Lead Compliance Plan
- 12.7.1.15. Request(s) not to use respirators
- 12.7.1.16. Request(s) not to use engineering controls
- 12.7.1.17. Confined Space Program
- 12.7.1.18. Reserved
- 12.7.1.19. Hearing Conservation Program
- 12.7.1.20. Thermal Stress Program
- 12.7.1.21. Fall Protection Plan(s)
- 12.7.1.22. Clean Water Compliance BMP Plan
- 12.7.1.23. Mercury and PCB Compliance Plan
- 12.7.1.24. Abrasive Blasting Plan
- 12.7.1.25. HEPA filter manufacturer's certification
- 12.7.1.26. HEPA filter DOP test results for HEPA vacuums and negative air machines and
- 12.7.1.27. Reserved
- 12.7.1.28. Lift Procedure
- 12.7.1.29. Gas Cylinder Use & Storage Plan
- 12.7.1.30. Back Injury Program
- 12.7.1.31. Blood borne pathogen Plan

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- 12.7.2. Submit the following to the Company, as applicable, for information:
 - 12.7.2.1. Medical program and principal medical provider,
 - 12.7.2.2. List of Personnel Safety Systems,
 - 12.7.2.3. Rigging Hardware Certificate of Compliance and Proof Test Record,
 - 12.7.2.4. Subcontractor Hazardous Materials Inventory Report before delivery of hazardous materials to Y-12, monthly while such materials are at Y-12, and submit a final (negative) report when work is complete and materials have been removed from Y-12,
 - 12.7.2.5. Material Safety Data Sheets (MSDS),
 - 12.7.2.6. Copy of Seller's license for Asbestos Abatement, and
 - 12.7.2.7. Notification of Asbestos Demolition or Renovation (NoDR) information for abatement and demolition.
- 12.7.3. Submit the following to the Company, as requested:
 - 12.7.3.1. List of persons performing specialized work,
 - 12.7.3.2. OSHA 300 Log,
 - 12.7.3.3. Seller Employee Training Records and Certifications,
 - 12.7.3.4. Records related to asbestos work activities,
 - 12.7.3.5. Records related to Personnel Safety Systems,
 - 12.7.3.6. Testing laboratory proof of compliance with OSHA requirements regarding NIOSH training and testing methods,
 - 12.7.3.7. Air monitoring test results and analysis,
 - 12.7.3.8. Noise monitoring data and exposure assessment,
 - 12.7.3.9. List of all equipment that exceeds 85dBA noise exposure (either continuous or impulse/impact noise),
 - 12.7.3.10. Exposure assessment for dust producing concrete work when respiratory protection is not required,
 - 12.7.3.11. Documentation from licensed medical provider of suitability to perform confined space work,
 - 12.7.3.12. Fire Prevention Inspection Records, and
 - 12.7.3.13. Records related to Beryllium work activities.
- 12.7.4. By the 3rd workday of each month, submit the following to the Company for the prior month (regardless of any accidents or incidents):
 - 12.7.4.1. *Subcontractor Safety Performance Report (UCN-21439)*
- 12.8. ES&H Program
 - 12.8.1. Corporate ES&H Program shall include:
 - 12.8.1.1. Seller's Corporate ES&H requirements, and
 - 12.8.1.2. Activity Hazard Identification and Analysis process

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- 12.8.2. ES&H Plan: Seller shall address subcontract-specific details as they relate to their Corporate ES&H Program.
- 12.8.2.1. Describe how the Seller's ES&H Program will be implemented to include:
- 12.8.2.1.1. ES&H requirements incorporated into management and work practices that demonstrate that cost, schedule and quality concerns do not prevail over safety; that supervisors are familiar with and enforce safety rules and have sufficient authority and control to effectively implement safety requirements and that Seller management personnel are active participants in all aspects of the project safety program. These aspects include those described herein and participation in the Company Safety Teams, new employee orientation, safety assessments, employee safety recognition, Toolbox Safety meetings and development of the Seller Activity Hazard Analysis;
 - 12.8.2.1.2. Seller roles and responsibilities for compliance with ES&H requirements, including means for ensuring supervisors, the ES&H Representative, and workers analyze the work to define hazards, and how responsibility will be assigned to lower-tier subcontractors;
 - 12.8.2.1.3. Methods to ensure personnel have the requisite knowledge, training, certification, and skills to discharge ES&H responsibilities;
 - 12.8.2.1.4. Methods to maintain employee ES&H awareness and involvement, including employee's rights and obligation to report unsafe work conditions, express ES&H-related concerns without reprisal;
 - 12.8.2.1.5. Methods to ensure employees understand hazards, how to eliminate or reduce associated risks, and how to use worker feedback and involvement;
 - 12.8.2.1.6. Methods to ensure workers have the requisite knowledge, training, certification and skill to perform work activities and operate equipment/tools;
 - 12.8.2.1.7. Seller programs, requirements, and procedures for confined space work, fall protection, respiratory protection, PPE, hazard communication, noise exposure, thermal stress, machine guarding, hoisting and rigging, excavation/penetration work, hot work, emergencies, first aid and other work activities;
 - 12.8.2.1.8. Processes to inspect, certify, maintain, and repair equipment and tools, including emergency equipment. Method to control the usability status of equipment/tools;
 - 12.8.2.1.9. Employee disciplinary program for violations of ES&H requirements;
 - 12.8.2.1.10. Seller ES&H self-assessment and safety inspection processes, including sampling and monitoring;
 - 12.8.2.1.11. Investigation procedures for accidents, injuries, noncompliances, deficiencies, releases, spills, and near misses;

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- 12.8.2.1.12. ES&H document and record management;
- 12.8.2.1.13. ES&H reporting requirements;
- 12.8.2.1.14. Use of National Association of Demolition Subcontractors Demolition Safety Manual as guidance for good practices on demolition projects;
- 12.8.2.1.15. Incorporate text that addresses policy, goals and objectives, ISMS, and employee involvement to incorporate general awareness of the subcontractor to basic environmental responsibility;
- 12.8.2.1.16. Implementing changes to the ES&H Plan; and
- 12.8.2.1.17. Securing and preserving the scene when accidents, injuries, spills, fires, near misses, or other abnormal events occur. Obtaining personnel statements and determining a chronology of events.
- 12.8.2.2. Company approval of the ES&H Plan is required prior to the start of work. Changes to the ES&H Plan require Company approval prior to starting work covered by the changes.
- 12.8.3. Activity Hazards Analysis (AHA)
 - 12.8.3.1. Define the work activities, identify the associated hazards that could adversely affect health, safety, or the environment, and define specific actions to eliminate or minimize the risks involved. The AHA shall include controls for job hazards and characterization data and address permit requirements, training, engineering and administrative controls, and PPE. Revise the AHA, and re-submit to the Company for approval, when the work activities or conditions change to the extent that different or additional hazards may be present.
 - 12.8.3.2. Company characterization of the work site indicates no hazards from radiological contamination are anticipated. In the event contamination is discovered by Company radiological control technicians supporting the Seller's work activities, stop work and follow direction provided by the technician and STR.
 - 12.8.3.3. Identify hold points in the AHA for evaluating permit requirement with requirements listed in AHA. Discrepancies shall be resolved prior to initiating permitted activities.
 - 12.8.3.4. Seller shall ensure hazards and controls for lower-tier subcontractor activities are addressed in the AHA.
 - 12.8.3.5. The AHA and any revisions shall be signed by the Seller prior to performing the work activity, certifying that the AHA has been reviewed, and AHA requirements will be met. The AHA and subsequent revisions shall have an issue date on the cover page.
 - 12.8.3.6. The Seller shall use the Company's task planning process known as Safety Task and Risk Reduction Talk (STARRT).
 - 12.8.3.7. Supervisors of the Seller and of all lower-tier subcontractors shall ensure that their employees understand the purpose of, and participate in the AHA and STARRT processes and shall use them as primary planning and lessons learned tools.

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12.8.4. Personnel Safety Systems

- 12.8.4.1. Provide a list of new or first time activities or atypical processes, operations or systems requiring personnel safety systems to the Company for information. New or first time activities or atypical processes, operations or systems that involve personnel safety systems are defined as a process, operation, system or equipment that is not specifically addressed under OSHA Construction Standards 29 CFR 1926, OSHA General Industry Standards 29 CFR 1910, or a National Consensus Standards. If no activities, processes, operations or systems apply then indicate “NONE” on the submitted list.
- 12.8.4.2. Subject Matter Expert (SME) shall be engaged in preparing the Hazard Evaluation and Risk Assessment and identifying controls, hold or witness points to mitigate the hazard for new or first time activities or atypical processes, operations or systems. Submit Hazard Evaluation including mitigating controls for Company acceptance. Examples include but are not limited to: Engineered work platforms or other system designs, construction aids, shop built equipment, proprietary specialty operations or processes, hot tap operations, specialty LO/TO processes, etc.
- 12.8.4.3. Seller shall provide, upon Company request, supporting calculations, tests, SME evaluation, proprietary information, etc. for use by the Company on new or first time activities or atypical processes, operations or systems.

12.9. ES&H Representative

- 12.9.1. Designate an ES&H Representative for oversight and implementation of the ES&H requirements. The ES&H Representative is subject to Company approval and shall be on site at all times when work is being performed. Unless Company approves otherwise, the Seller’s ES&H Representative shall have no other job responsibilities. The Company may request to interview the prospective ES&H Representative in advance of Company approval.
- 12.9.2. The ES&H Representative shall possess a combination of education, training, and experience sufficient to implement the Seller’s ES&H Plan. The minimum qualifications are:
 - 12.9.2.1. Four-year technical degree in an ES&H Discipline plus a minimum of three (3) years safety and health experience in related construction work environment. Subject to the Company’s approval, Seller may substitute work experience for the technical degree.
 - 12.9.2.2. Thirty (30) hour Occupational Safety and Health Standards in the Construction Industry training course (OTI 510) or equivalent.
 - 12.9.2.3. Understanding of Tennessee Department of Environment and Conservation (TDEC) General Storm Water Permit or equivalent requirements.
 - 12.9.2.4. Provide three (3) professional references that have first-hand knowledge of the candidate’s safety and health experience that the Company may contact.
- 12.9.3. The ES&H Representative shall have the following responsibilities:
 - 12.9.3.1. Meet with Company prior to start of on-site work to establish evacuation instructions, site access control, fire protection, spill response and control, emergency management, medical and drug testing, and reporting.

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- 12.9.3.2. Perform daily ES&H inspections.
 - 12.9.3.2.1. Ensure stop or suspend work deficiencies are corrected and work start authorization received before resumption of work.
 - 12.9.3.2.2. Ensure barriers and postings are adequate and in place.
 - 12.9.3.3. Conduct and document daily ES&H briefings (at beginning and end of each work shift) with workers to discuss the day's tasks, hazards, relevant ES&H topics, and follow-up to obtain feedback.
 - 12.9.3.4. Maintain documentation of inspections, briefings, and meetings.
 - 12.9.3.5. Conduct a weekly safety meeting with workers.
 - 12.9.3.6. Ensure workers review and sign off as having read and understood the Seller's AHA and Company's RWP for the work being performed before entering the work area.
 - 12.9.3.7. Ensure workers have reviewed permits for the work being performed before beginning permitted work.
 - 12.9.3.8. Serve as the Seller's point of contact for ES&H concerns.
 - 12.9.3.9. Administer the ES&H Plan including any changes.
 - 12.9.3.10. Review and analyze injury and illness reports and investigate accidents.
 - 12.9.3.11. Participate in ES&H-related investigations, approve corrective actions, and maintain records.
 - 12.9.3.12. Ensure housekeeping is maintained and work and lay down areas are kept clean, free of tripping hazards, pathways remain open, fire prevention is implemented, and storm water pollution prevention controls are maintained.
 - 12.9.3.13. Post all ES&H-related permits in a designated area at the work area.
 - 12.9.3.14. Initiate timely corrective actions to deficiencies identified by self-assessments, inspections, investigations, or Company oversight.
 - 12.9.3.15. Review training records and ensure individual's training and certifications are current to meet job requirements.
 - 12.9.3.16. Ensure environmental compliance requirements are met and environmental inspections are completed and documented in a timely manner.
 - 12.9.3.17. Ensure monitoring is performed and maintain current exposure assessments for noise, thermal stress, hazardous chemical and physical agents, as applicable.
 - 12.9.3.18. Maintain Hazardous Material Inventory Report (HMIR) and Material Safety Data Sheets (MSDS) for products being stored or in use. and
 - 12.9.3.19. Ensure sub-tier subcontract personnel work safely by coordinating briefings, training, and oversight activities needed.
- 12.10. First Aid
- 12.10.1. Maintain a minimum of one person certified to administer first aid and cardiopulmonary resuscitation (CPR) on-site when work is being performed. Maintain first aid log for purpose of injury trending and replenishing first aid supplies.
 - 12.10.2. Provide first aid supplies and fire extinguishing equipment in accordance with 29 CFR 1926.23 and 29 CFR 1926, Subpart F.

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- 12.10.3. Provide proper sterilization methods and materials to be used and provisions for proper disposal of hazardous medical wastes, including a “sharps” container for the secure disposal of used needles and similar medical items.
 - 12.10.4. Notify Company immediately of injury requiring first aid.
 - 12.10.5. The status of any employee injured on the project and returned for modified duty shall be documented by the Seller’s treating medical practitioner and reported in writing to the Company.
- 12.11. Reporting
- 12.11.1. Notify the STR of employees that are "Declared Pregnant Workers" per 10 CFR 835.
 - 12.11.2. Event/Condition Reporting
 - 12.11.2.1. Seller shall report any actual or potentially adverse event/condition to the STR immediately (within 15 minutes) upon identification (e.g., pipe break, valve failure, loss of power, environmental spill, fire, overheating equipment, any as-found state that may have adverse safety, health, quality, security, operational or environmental implications.).
 - 12.11.2.2. Included in the immediate notification to the STR are those events/conditions impacting the Company in the following categories:
 - 12.11.2.2.1. Operational Emergencies (Impact to the Y-12 Complex);
 - 12.11.2.2.2. Personnel Safety and Health (First aid, occupational illness/injury, fire/explosion, hazardous energy control);
 - 12.11.2.2.3. Nuclear Safety Basis (Impact to Technical Safety Requirements; or nuclear criticality);
 - 12.11.2.2.4. Facility Status (Degradation of a Structure, System, or Component; Identification of suspect counterfeit or defective items/materials);
 - 12.11.2.2.5. Environmental (Release or impact to ecological and cultural resources);
 - 12.11.2.2.6. Contamination/Radiation Control (Loss of control of radioactive material or spread of radioactive contamination, Radiation exposure or personnel contamination);
 - 12.11.2.2.7. Nuclear Explosive Safety;
 - 12.11.2.2.8. Transportation (Release or incident involving hazardous material, including radioactive material, during transportation or packaging);
 - 12.11.2.2.9. Noncompliance Notifications (Any enforcement action or written notification from an outside regulatory agency); and/or
 - 12.11.2.2.10. Management Concerns/Issues.
 - 12.11.2.3. Seller shall initiate, as appropriate, actions necessary to mitigate or control the event/condition. Secure the scene to protect relevant evidence and information for any subsequent investigation. Provide preliminary information on the event/condition to the STR.
 - 12.11.2.4. Seller shall provide follow-up notifications to the STR if the event/condition worsens, becomes an emergency or as requested.

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- 12.11.2.5. Seller shall conduct an investigation and provide to the STR records pertinent to the event/condition, such as personal statements, chronology, fact sheets, root cause analysis results, and other pertinent documents.
 - 12.11.2.5.1. Personal statements and draft chronology are due within 1 workday of the event/condition identification unless requested otherwise.
 - 12.11.2.5.2. Documents submitted shall contain sufficient detail to enable the Company to assess the significance, consequences, or implications of the event/condition, and to allow evaluation of the controls/mitigation being proposed or employed.
 - 12.11.2.6. The Company may elect to conduct a critique of the event/condition; the Seller shall participate in the critique providing documents from investigation results and complete the assigned corrective actions within the Seller's control. The Seller shall bear the costs incurred due to event /conditions caused by the Seller. Costs include those incurred by the Seller and by Company.
 - 12.11.3. Submit completed DOE F 5484.3 *Individual Accident/Incident Report* within two workdays of a vehicle/property damage, or recordable or lost time accident or injury. The block entitled "Organization Name" shall list Seller's name; the block entitled "Department, Division, or ID Code" shall list the Subcontract number. Provide supporting documentation to the STR as soon as available.
 - 12.11.4. Promptly report suspected employee exposure to contaminants exceeding ES&H requirements, and sampling and monitoring results exceeding ES&H thresholds to the STR or Company Safety Representative.
- 12.12. Personal Protective Equipment (PPE)
- 12.12.1. Provide PPE in accordance with 29 CFR 1926, Subpart E and the following:
 - 12.12.1.1. All persons accessing a construction area shall wear hard hats in accordance with ANSI Z89.1 and safety glasses with rigid side shields in accordance with ANSI Z87.1.
 - 12.12.1.2. Employees performing grinding and buffing operations shall wear face shields and safety glasses or mono goggles. During welding, welders shall wear safety glasses and hardhat/welding hood combinations. Welding screens shall be used to protect other employees from the hazards associated with direct welding arc rays.
 - 12.12.1.3. Safe and appropriate footwear is required for Seller's employees, lower-tier subcontractor's, and visitors.
 - 12.12.1.3.1. Safety-toe work boots in accordance with ASTM-F2412 and ASTM-F2413 are required for persons involved in work activities or entering areas posted accordingly.
 - 12.12.1.3.2. Appropriate footwear for office, shower, non-construction and otherwise posted areas include shoes with:
 - 12.12.1.3.2.1. Closed toes and heels or heel supports (sling backs)
 - 12.12.1.3.2.2. Low heels that provide good ankle support and stability (heels 3" or less in height and heel base width 1" minimum and sole thickness less than 1")

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- 12.12.1.3.2.3. Non-skid soles
 - 12.12.1.3.2.4. Shower shoes are acceptable while showering, participating in lung counter monitoring, or when otherwise required. Molded /plastic “gummy shoes” and flip flops/beach shoes are otherwise inappropriate.
 - 12.12.1.4. Additional PPE such as hand and arm protection, safety harnesses, lanyard systems, etc. shall be used as required by the AHA.
 - 12.12.1.5. Seller employees who handle chemicals or harmful substances shall be trained and shall wear appropriate personal protective equipment per the chemical manufacturer’s recommendations.
- 12.13. Occupational Health Protection Threshold Exposure Limits
- 12.13.1. Limit exposure to chemical substances, physical agents, and biological hazards to the permissible exposure limits of 29 CFR 1926, Safety and Health Regulations for Construction.
 - 12.13.2. The ACGIH *Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices, (BEI)* exposure limits are to be administered per the "Policy Statement on the Uses of TLVs and BEIs" when threshold limit values are lower (more protective) than OSHA *Permissible Exposure Limits (PELs)*.
 - 12.13.2.1. When ACGIH TLVs are used as exposure limits, Seller shall nonetheless comply with the other provisions of any applicable OSHA-expanded health standard.
- 12.14. Hazard Communication (HazCom)
- 12.14.1. Pursuant to 29 CFR 1910.1200, the Seller shall make available MSDSs for hazardous substances present at the work or lay down areas.
 - 12.14.2. Submit a copy of MSDS sheets to the Company prior to delivery of hazardous material to Y-12, maintain a copy of the MSDS sheets at the work area accessible to all workers, and submit the *Subcontractor Hazardous Materials Inventory Report (HMIR)* (UCN-21445) to the Company at the beginning of work, then monthly, and when work at Y-12 is complete.
 - 12.14.2.1. The Company may restrict the amount of chemical product(s) at Y-12. Chemical or other hazardous substances banned by a Federal or Tennessee State regulatory agency shall not be brought to Y-12. Asbestos, polychlorinated biphenyls (PCBs), and banned chlorofluorocarbons are prohibited. Aerosol cans shall be incorporated in the HMIR and managed in accordance with Waste Management requirements.
 - 12.14.3. The Company will provide the Seller MSDS for existing Y-12 hazardous substances upon request. The Seller can access an on-line database of hazardous substances at Y-12 to obtain MSDS.
 - 12.14.4. Hazardous material transferred or shipped to a Facility or area under control of a *Facility Safety Basis* shall receive Company Facility Operation Manager or designee approval prior to initiating transfer/shipment. The Company may restrict the hazardous material quantities to maintain quantities within the *Facility Safety Basis* Maximum Anticipated Quantities (MAQ).
 - 12.14.5. Seller’s employees shall attend Company Hazard Recognition Training.

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12.15. Excavations

- 12.15.1. Seller's Competent Person shall be on-site during excavation or trenching work greater than 4 feet deep and or in soil that requires classification. The Competent Person shall perform inspections of the work on a daily basis and complete form CFN-1031, Daily Trench Report for each inspection performed.
- 12.15.2. Submit shoring calculations to the Company for information and perform excavations per 29 CFR 1926, Subpart P.
- 12.15.3. Control dust emissions in accordance with TN 1200-3. Limit use of water to prevent erosion and run-off into storm drains.
- 12.15.4. The Oak Ridge Reservation is a CERCLA site listed on the National Priority List (NPL). Seller shall not perform excavations or disturb any area on the Y-12 Complex without prior approval of the Company.
- 12.15.5. The generation of excess soil from excavation shall be minimized and managed to prevent migration from the work area.
- 12.15.6. Seller shall notify STR two (2) workdays prior to any excavation activities for RadCon support.
- 12.15.7. No excavations shall be performed greater than 12 inches in depth or greater than 25 square feet in surface area without an *Excavation Permit*.
- 12.15.8. Excavation material stockpiles shall be kept 3 feet or more from edge of excavations and where trenches or excavations exceed 4 feet in depth, the Seller shall use approved protective systems.

12.16. Confined Space

- 12.16.1. Perform work in accordance with 29 CFR 1910.146.
 - 12.16.1.1. For confined space entrants, attendants and air monitoring personnel, Seller shall provide medical surveillance documentation of their physicals and psychological suitability to do confined space work in accordance with ANSI Z117.1, *Safety Requirements for Confined Spaces*.
- 12.16.2. Submit Seller Confined Space Program for Company approval or adopt Company program and complete Company training.
- 12.16.3. Confined space entrants shall wear a rescue harness with lifeline, except when use increases the risk or does not contribute to the rescue.
- 12.16.4. Excavations greater than 4 feet deep and welding in a confined space shall be evaluated by the Seller for risk classification.
- 12.16.5. A Company-issued permit is required for existing Company confined spaces. The Seller shall implement a Confined Space Program for confined spaces created during their work. Submit requests for Company permits four (4) workdays in advance of need.

12.17. Lockout/Tag-out

- 12.17.1. A *Lockout/Tag-out Permit* is required before performing work on energized equipment, near overhead lines, or excavating near underground utilities where an energized source exists.
- 12.17.2. Reserved.
- 12.17.3. Hazardous energy sources may need to be de-energized and locked out before the Seller can begin certain work.
- 12.17.4. Note additional requirements outlined in Paragraph 12.17.14 below for Working On or Near Energized Circuits.

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- 12.17.5. The Company will perform the initial Lockout/Tag-out of existing Y-12 systems and equipment, or issue the permit for electrical distribution systems or equipment and will remove the final lock or tag, respectively. A four (4) workday notice is required for the Company to perform the initial Lockout/Tag-out. Seller shall complete its work and remove all locks prior to the Company removing the final lock/tag.
 - 12.17.5.1. Lockout/Tag-out permit is not required where energy source has been air gapped. Seller shall verify condition.
 - 12.17.5.2. Seller shall confirm absence of energy on Lockout/Tag-out system/components prior to commencing work.
- 12.17.6. All 3rd party utility outages shall be coordinated with the Company before Seller contacts utility owner. Seller shall coordinate LO/TO with the utility owner.
- 12.17.7. All Lockout/Tag-out will be performed in accordance with the requirements prescribed in UPF Construction Procedure Y17-95-64-801. This procedure provides a definition of the expected standard for the lockout and tag-out of equipment to protect personnel while working on systems and components. The Seller shall comply with this procedure to control its work process and will not utilize alternate Lockout/Tag-out procedures.
- 12.17.8. Lockout/Tag-out performed on existing Y-12 systems will be performed in accordance with Company procedure Y73-107. Lockout/Tag-out performed on existing Y-12 Transmission and Distribution Electrical lines will be performed in accordance with Company procedure Y73-102.
- 12.17.9. The Seller shall serve as the Permit Requestor. The Permit Requestor is responsible for the following:
 - 12.17.9.1. Filling out the permit for defining the work or testing to be performed and providing sufficient detail to allow adequate evaluation of the isolation boundary.
 - 12.17.9.2. Recommending the mechanical system, equipment and/or electrical circuits to be tagged or locked out.
 - 12.17.9.3. Requesting guidance and assistance from the Field Engineer/Project Startup Engineer and Issuing Authority as needed to understand all potential energy sources.
 - 12.17.9.4. Verifying that isolation boundaries are adequate for the work or testing to be performed; ensuring that all safety requirements are in place to do the work required (i.e., confined space entry permit).
 - 12.17.9.5. Independently verifying that each tagged or locked component is in the position indicated on the System / Component Safety Tagging Permit.
 - 12.17.9.6. Signing the System / Component Safety Tagging Permit (CFN-1105) signifying that the boundary is adequate and understood, prior to the starting of work.
 - 12.17.9.7. Assuring that Authorized Employees (AE) working under this procedure receive the same level of protection as a personal lock through the use of a lock box or System / Component Safety Tagging Permit as described in this procedure. If a foreman/supervisor signs on to the permit for his/her work crew, all work crew members must be listed on the permit.
 - 12.17.9.8. Ensuring that all AEs have removed their personal locks from the lock box when work is completed, and the machine, system, or equipment is capable of being safely re-energized.

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- 12.17.9.9. Signing the System / Component Safety Tagging Permit when the work is completed.
- 12.17.10. Authorized Employees of the Seller shall:
 - 12.17.10.1. Verify that the System/Component Safety Tagging Permit is in effect prior to performing work.
 - 12.17.10.2. Ensure that all safety precautions are in place and verify that adequate training needed to safely perform the work tasks is complete.
 - 12.17.10.3. Sign onto the System/Component Safety Tagging Permit (CFN-1105) and place their lock on the lockbox as applicable.
 - 12.17.10.4. Follow direction relative to System/Component Safety Tagging for safety tags and locks provided by the Issuing Authority (IA).
 - 12.17.10.5. Remove their personal locks from the lock box (if used) and sign off (release) permit when work is complete or work is no longer being performed under the permit.
- 12.17.11. Affected Employees of the Seller:
 - 12.17.11.1. Shall be briefed by the IA of the application and removal of lockout or tag-out devices. This may be done through routine communications such as daily plan of the day to AE supervision for dissemination to AEs.
 - 12.17.11.2. Are not required to sign permits, hang personal locks, tags, or other devices as part of the energy control procedure.
 - 12.17.11.3. May **NOT** perform work on any system or component under permit. The Affected Employee shall sign onto a permit if their responsibility requires work on a protected component. At that point they are no longer an Affected Employee; they are an Authorized Employee (AE).
- 12.17.12. Other personnel listed within UPF Construction Procedure Y17-95-64-801 are B&W UPF employees.
- 12.17.13. Forms to be utilized for Lockout/Tag-out are as noted below:
 - 12.17.13.1. CFN -1105, UPF System/Component Safety Tagging/Lockout Permit
 - 12.17.13.2. CFN -1059, UPF System/Component Safety Tagging/Lockout Permit Log
 - 12.17.13.3. CFN -1060, UPF System/Component Safety Personal Lock Log
 - 12.17.13.4. CFN -1061, UPF System/Component Safety Temporary Suspension Cover Sheet
 - 12.17.13.5. CFN -1062, UPF System/Component Safety Temporary Suspension Log

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12.17.14. Working On or Near Energized Circuits

- 12.17.14.1. The Seller shall have only Qualified Electrical Workers perform work on or near exposed energized circuits. Seller shall provide Qualified Electrical Workers that, at a minimum, possess skills and knowledge related to the construction and operation of the electrical equipment and installations and have received safety training on the hazards involved. Individuals shall be competent in the skills and techniques necessary to distinguish exposed energized parts from other parts of the equipment. They shall be competent in the proper use of special precautionary techniques, Personal Protective Equipment (PPE), insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electrical equipment. In addition, the Qualified Electrical Workers must comply with one of the following:
 - 12.17.14.1.1. Documented completion of an electrical apprenticeship program.
 - 12.17.14.1.2. Certified as an Industrial Electrician through the National Center for Construction Education and Research (NCCER) and 48 months work experience.
 - 12.17.14.1.3. Certified as an Electrician Journeyman through a Craft Certification Program approved by the Company.
 - 12.17.14.1.4. Possess a State Master Electrician License or State equivalent.
 - 12.17.14.1.5. Possess certification as a Journeyman Electrician (i.e., IBEW or equivalent).
 - 12.17.14.1.6. Completion of a trade school electrical training program.
 - 12.17.14.1.7. Completion of military training for electrical related work.
 - 12.17.14.1.8. College graduate in a related electrical field.
 - 12.17.14.1.9. Demonstrated electrical knowledge through hands on experience.
- 12.17.14.2. Seller shall provide a Buddy/Safety Observer (B/SO). The B/SO is a designated person that will notify emergency safety response personnel, if required. The B/SO shall remain outside the Limited Approach Boundary (LAB) and/or the Flash Protection Boundary, whichever is greater, to prevent others from unauthorized entry into the LAB. Additionally, this person must be knowledgeable of the location and operation of the device to de-energize the equipment that is being worked on. The B/SO is required when testing is being performed on systems rated at 600 VAC or 250 VDC and higher. The B/SO is required to wear the same level of PPE as the person performing the work.
- 12.17.14.3. Working on or near live parts and/or exposed energized electrical equipment shall only be permitted after the Seller has determined that the energy isolation cannot be reasonably accomplished or the needed data can best be obtained while the circuit is energized (e.g., scheme checks, loop checks, control system troubleshooting and testing).
- 12.17.14.4. The Seller or its lower tiers performing work shall be responsible to take an active role in eliminating or minimizing electrical hazards prior to starting any electrical work.

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- 12.17.14.5. If the exposed energized components cannot be electrically isolated, the Seller shall:
 - 12.17.14.5.1. Complete a STARRT/JSA (Safety Task Analysis & Risk Reduction Talk/Job Safety Analysis) card for each scope based on specific configurations. The STARRT card will be used on all work activities regardless of the voltage and in voltages above 600 VAC and 250 VDC would require a JHA in addition to the STARRT card.
 - 12.17.14.5.2. Determine the LAB and Flash Protection Boundary. Refer to National Fire Protection Association (NFPA) policy NFPA 70E – 2009, Standard for Electrical Safety in the Workplace® to determine the Flash Protection Boundary.
 - 12.17.14.5.3. Reduce or mitigate hazards by installing protective shields where appropriate to prevent accidental contact with exposed energized equipment by workers, material, and/or tools.
 - 12.17.14.5.4. Utilize appropriate PPE, in accordance with this SWPP, that will protect the individual from the hazard.
 - 12.17.14.5.5. The Seller shall assist Company personnel with development of the Energized Electrical Work Permit (EEWP).
 - 12.17.14.5.6. Where protection shields have been installed and no exposed energized components are a hazard, the LAB requirements no longer apply. Work activity to remove protective shields shall comply with the requirements of this procedure.
- 12.17.14.6. When work is being performed within the LAB or Flash Protection Boundary, the following requirements also apply:
 - 12.17.14.6.1. The crew and crew supervisor for the Seller must complete a STARRT card to ensure that each employee is aware of all known hazards in the designated work area. All crew members must sign the STARRT card acknowledging their review before starting work. The Seller shall maintain the signed STARRT card as a record until work is completed. STARRT cards (and JHA) may be developed for multiple activities, such as several loop checks, several scheme checks, troubleshooting controls systems, etc.
 - 12.17.14.6.2. The Seller shall install red and black “DANGER” barrier tape as a visible barrier to preclude unauthorized entry into the LAB or Flash Protection Boundary from all accessible directions. Additionally, a sign or tag identifying the hazard must be present at the barrier.
 - 12.17.14.6.3. The Seller shall provide a minimum of two personnel to perform this work. The person performing the actual hands-on work must be a Qualified Electrical Worker. The other person shall be the B/SO and must be a Qualified Electrical Worker. The individual appointed as the B/SO shall be identified on the corresponding STARRT card along with the applicable emergency phone numbers.

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- 12.17.14.6.4. The Seller shall have an A-B-C rated fire extinguisher available at the work site. For purposes of these requirements; the work site is defined as the area immediately adjacent to the location where the physical work is being performed.
- 12.17.14.6.5. The Seller must ensure that the work area is dry, adequately illuminated, and free of obstructions or debris that may become a hazard or interfere with the work activity.
- 12.17.14.6.6. The B/SO shall ensure that all other personnel in the work vicinity are kept outside of the LAB and Flash Protection Boundary while work is being performed. The B/SO may allow qualified Electrical Workers and escorted employees to cross the LAB and Flash Protection Boundary when it is safe. The B/SO shall remain outside the LAB and/or the FPB, whichever is greater, to prevent unauthorized entry into the LAB/FPB. Additionally, this person must be knowledgeable of the location and operation of the device to de-energize the equipment that is being worked on. A B/SO is required when testing is being performed on systems rated at 600 VAC or 250 VDC and higher. The B/SO is required to wear the same level of PPE as the person performing the work.
- 12.17.14.6.7. Tools shall be kept in temporary storage while not in use. Tools shall not be placed on top of cabinets or any other item where they could possibly fall onto energized components.
- 12.17.14.6.8. Before pulling a conductor through any area with exposed energized components, the ends of the conductors shall be sufficiently protected with an insulating material of the same rating as the conductor itself. If a pulling device is used, it must nonconductive.
- 12.17.14.6.9. The organization performing work shall ensure that voltage rated tools (including non-conducting ladders) are used in the vicinity of live electrical conductors.
- 12.17.14.7. Flash Hazard Protection – Flash Hazard Analysis
 - 12.17.14.7.1. A flash hazard analysis shall be performed in accordance with NFPA 70E-2009, *Standard for Electrical Safety in the Workplace*, Section 130.3(A) in order to minimize injuries by an arc flash. The analysis shall determine the Flash Protection Boundary and the PPE that people within the Flash Protection Boundary shall use.
 - 12.17.14.7.1.1. For systems that are 600 volts or less, the Flash Protection Boundary shall be 4.0 feet (1.2 meters), based on the product of clearing times of 6 cycles (0.1 second) and the available bolted fault current of 50 kA or any combination not exceeding 300 kA cycles (5000 ampere seconds).

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- 12.17.14.7.1.2. For clearing times and bolted fault currents other than 300 kA cycles, or under Engineering supervision, the Flash Protection Boundary shall alternatively be permitted to be calculated in accordance with the general formula in NFPA 70E – 2009 *Safety Related Work Practices*.
 - 12.17.14.7.1.3. At voltage levels above 600 volts, the Flash Protection Boundary is the distance at which the incident energy level equals 1.2 cal/cm². For situations where fault clearing time is 0.1 second (or faster), the Flash Protection Boundary is the distance at which the incident energy level equals 1.5 cal/cm².
- 12.17.14.8. Protective Clothing and Personal Protective Equipment for Application with a Flash Hazard Analysis
- 12.17.14.8.1. Where it has been determined that work will be performed within the Flash Protection Boundary, the flash hazard analysis shall determine, and the Seller shall document, the potential incident energy exposure of the worker (in calories per square centimeter). The incident energy exposure level shall be based on the working distance of the employee's face and chest areas from a prospective arc source for the specific task to be performed. Flame-resistant (FR) clothing and PPE shall be used by the employee based on the incident energy exposure associated with the specific task. Recognizing that incident energy increases as the distance from the arc flash decreases, additional calculations will be necessary if the work requires any parts of the body to be closer than the distance at which the incident energy was determined.
 - 12.17.14.8.2. As an alternative, the PPE requirements of NFPA 70E-2009 *Safety Related Work Practices* shall be permitted in lieu of the detailed flash hazard analysis approach described above. However, in order to use this requirement, the short-circuit current available and fault clearing times must be within the limits specified in the notes of NFPA 70E-2009. If the criteria stated in the notes section of NFPA 70E-2009 are not met, then a flash hazard analysis is required.
- 12.17.14.9. Energized Electrical Work Permit (EEWP)
- 12.17.14.9.1. If live parts are not placed in an electrically safe work condition, work to be performed shall be considered energized electrical work and shall be performed by written permit (EEWP). The Seller shall assist Company personnel with development of the EEWP. The following requirements shall be documented:
 - 12.17.14.9.1.1. Description of the circuit and equipment to be worked on and their location

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- 12.17.14.9.1.2. Justification for why the work must be performed in an energized condition
- 12.17.14.9.1.3. Description of the safe work practices to be employed
- 12.17.14.9.1.4. Determination of the LAB from exposed energized parts for unqualified workers
- 12.17.14.9.1.5. Determination of Restricted and Prohibitive Approach Boundary for qualified workers
- 12.17.14.9.1.6. Results of the flash hazard analysis
- 12.17.14.9.1.7. Flash Protection Boundary (projects may establish generic boundaries for voltages available on site based on a worst-case analysis of the distribution system)
- 12.17.14.9.1.8. Necessary PPE to safely perform the assigned task
- 12.17.14.9.1.9. Means employed to restrict the access of unqualified persons from the work area
- 12.17.14.9.1.10. Evidence of completion of a job briefing, including a discussion of any job-specific hazards
- 12.17.14.9.1.11. Energized work approval signature(s)
- 12.17.14.9.2. Work performed on or near live parts by qualified persons related to tasks such as testing, troubleshooting, and voltage measuring, shall be permitted to be performed without an energized electrical work permit, provided appropriate safe work practices and PPE, in accordance with Chapter 1 of NFPA 70E *Standard for Electrical Safety in the Workplace*, are provided and used. Other tasks may be approved as exemptions to the EEWP by obtaining the concurrence of Company project management, as appropriate.
- 12.17.14.9.3. The STARRT card supplemental form shall be filled out for the work activities exempt from the EEWP, and kept with the STARRT card at the work location.
- 12.17.14.9.4. The Seller shall use forms noted below:
 - 12.17.14.9.4.1. CFN 1105 UPF System/Component Safety Tagging Permit
 - 12.17.14.9.4.2. CFN 1059 UPF System/Component Safety Tagging /Lockout Permit Log
 - 12.17.14.9.4.3. CFN 1060 UPF System/Component Safety Personal Lock Log
 - 12.17.14.9.4.4. CFN 1061 UPF System/Component Safety Temporary Lift
 - 12.17.14.9.4.5. CFN 1062 UPF System/Component Safety Temporary Lift Log

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12.18. Hoisting and Rigging

12.18.1. Seller shall perform hoisting and rigging activities (H/R) and certify that equipment meets minimum criteria in accordance with 29 CFR 1910 Subpart N, 29 CFR 1926 Subparts H and N, and the ANSI B30 and ANSI B56 Series.

12.18.2. In addition to paragraph 12.18.1 above, Seller shall implement and follow the Company requirements described herein.

12.18.3. Company requirements define the standard work processes that will be used for planning and executing hauling, rigging, and lifting work performed by the Seller. The scope includes H/R activities performed using powered lifting equipment such as cranes, forklifts, excavators and similar equipment when used with attachments for lifting, etc. and hoisting and rigging operations by hand utilizing come-a-longs, chain falls, jacks, winches, etc. Additionally, the roles and responsibilities of Seller personnel that plan, direct, supervise and execute hoisting and rigging activities are defined herein.

12.18.3.1. The Seller shall prepare lift/haul plans as applicable, furnish all required lifting equipment, rigging, hardware, etc., perform and document required inspections, maintain control of H/R equipment and hardware, and provide all supervision and labor to include Competent Person Rigger(s) (CPR), Person In Charge (PIC) and equipment operators meeting the qualifications required by the Company. Additionally, the Seller shall provide a Project Rigging Engineer (PRE).

12.18.3.2. Seller H/R programs and procedures used on site in the performance of work on this subcontract shall incorporate Company requirements.

12.18.3.3. The Company will approve lift classification, review and approve lift and haul plans prepared by the Seller, provide Company required testing and approval for Seller rigging personnel, review/approve operator qualifications and administer Company required written or oral and practical tests, and perform oversight of Seller planning and execution of H/R activities. Coordination of H/R activities between the Seller and the Company will be through the Company Field Engineer.

12.18.4. UPF Qualification of Construction Crane and Equipment Operators

12.18.4.1. Seller shall submit to the Company for approval evidence that crane operators meet minimum job qualifications including specific physical requirements, and demonstrate the knowledge and practical skills required to safely and proficiently operate the crane(s) and heavy lift equipment to which they are assigned. Such evidence shall consist of:

12.18.4.1.1. Valid certification from the National Commission for the Certification of Crane Operators (NCCCO).

12.18.4.1.2. In the absence of valid certifications from NCCCO, Seller shall submit its competence-based qualification program and registration scheme for crane operators to the Company for approval prior to mobilizing any cranes to the construction site. As a minimum, Seller's program shall be compliant with ASME B 30.5 Section 5-3.1.2.

12.18.4.2. Seller's crane operators shall be in possession of a valid certification or registration document, which is available for the Company's inspection.

12.18.4.3. As used herein, a crane includes not only conventional cranes but also alternate lifting systems.

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- 12.18.4.4. Crane operators and crane operator candidates shall meet the following physical qualifications:
 - 12.18.4.4.1. Vision of at least 20/30 Snellen in one eye and 20/50 in the other with or without corrective lenses.
 - 12.18.4.4.2. Ability to distinguish colors, regardless of position, if color differentiation is required.
 - 12.18.4.4.3. Adequate hearing, to meet operational demands, with or without hearing aid.
 - 12.18.4.4.4. Operational demands require operator and operator trainees to have sufficient:
 - 12.18.4.4.4.1. Strength
 - 12.18.4.4.4.2. Endurance
 - 12.18.4.4.4.3. Agility
 - 12.18.4.4.4.4. Coordination, and speed or reaction time.
 - 12.18.4.4.5. Operator and operator candidates shall have normal:
 - 12.18.4.4.5.1. Depth perception
 - 12.18.4.4.5.2. Field of vision
 - 12.18.4.4.5.3. Reaction time
 - 12.18.4.4.5.4. Manual dexterity
 - 12.18.4.4.5.5. Coordination and no symptoms of dizziness or similar undesirable characteristics.
 - 12.18.4.4.6. Each operator or operator candidate shall successfully pass a drug and alcohol screening.
 - 12.18.4.4.7. Evidence of a physical defect or emotional instability, that could render a hazard to the operator or others, may be sufficient cause for disqualification.
 - 12.18.4.4.8. Evidence that an operator is subject to seizures or loss of physical control shall be sufficient reason for disqualification. Specialized medical tests may be required to determine these conditions.
- 12.18.4.5. Operators shall satisfactorily complete (score of 70% or higher) Company administered competence tests that consist of the following:
 - 12.18.4.5.1. A written examination covering:
 - 12.18.4.5.1.1. Operational characteristics
 - 12.18.4.5.1.2. Operational controls and emergency control skills such as response to fire, power line contact, loss of stability, and control malfunction
 - 12.18.4.5.1.3. Characteristic and performance questions appropriate to the crane type for which qualification is sought.
 - 12.18.4.5.2. Demonstrate ability to:
 - 12.18.4.5.2.1. Read, write, and comprehend the crane manufacturer's operation and maintenance materials or approved translations thereof
 - 12.18.4.5.2.2. Apply arithmetic skills to load/capacity chart usage.

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- 12.18.4.5.3. A combination written and verbal test on load/capacity chart usage that covers a selection of the configuration (the crane may be equipped to handle) for the type crane for which qualification is sought.
- 12.18.4.5.4. An operation test demonstrating proficiency in:
 - 12.18.4.5.4.1. Handling the specific type crane
 - 12.18.4.5.4.2. Pre-start and post-start inspection
 - 12.18.4.5.4.3. Maneuvering skills
 - 12.18.4.5.4.4. Shutdown and securing procedures.
- 12.18.4.5.5. Demonstrate understanding of applicable sections of the ANSI/ASME Standards and federal, state, and local requirements.
- 12.18.4.5.6. The operator(s) shall demonstrate their crane operator skills in a live crane operation test to ensure that they are qualified to operate the crane(s) and/or crane type (hydraulic, lattice boom, etc.) to which he/she will be assigned.
- 12.18.4.5.7. Under the supervision of the Qualified Crane Operator Examiner, the operator(s) shall be given a fifteen (15) minute familiarization period to acquaint himself/herself with the test crane controls and functions. The familiarization period shall include specific instruction in the use of the Load Moment Indicator (LMI) installed in the crane used in the test.
- 12.18.4.5.8. The Crane Operator shall be required to make a preoperational inspection of the crane used in the test. The Qualified Crane Operator Examiner shall accompany the candidate(s) to evaluate the prospective operator's knowledge of the crane and his/her ability to complete this portion of the examination, which shall not exceed ten (10) minutes in duration.
- 12.18.4.5.9. The Crane Operator shall be evaluated on his/her knowledge of proper procedures in crane set-up. The examiner shall evaluate the candidate's ability in setting up and leveling the crane for safe operation. This portion of the test shall not exceed ten (10) minutes.
- 12.18.4.5.10. The Crane Operator shall be evaluated on his/her ability to control the load on the hook.
- 12.18.4.5.11. The examiner shall evaluate the Operator's ability in following the hand signals and controlling the load on the hook as follows [the maximum time allowed for each segment of the test is ten (10) minutes]:
 - 12.18.4.5.11.1. Raising and lowering the load (control of the load at the starting point and end point of the lift)

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- 12.18.4.5.11.2. Swinging the load (control of the load at the starting and ending points of the swing operations)
 - 12.18.4.5.11.3. Floating the load away from the crane (booming down and raising the load simultaneously, so as to maintain the relative distance of the load from the ground)
 - 12.18.4.5.11.4. Floating the load towards the crane (booming up and lowering the load simultaneously, so as to maintain the relative distance of the load from the ground)
- 12.18.5. UPF Qualifications of Construction Competent Person Riggers
- 12.18.5.1. The Seller shall designate a Competent Person Rigger(s) (CPR) to control all lifting prior to conducting any rigging operations on the construction site. The CPR shall be present at all times rigging operations and activities are being performed. The CPR may be a working foreman or supervisor.
 - 12.18.5.2. A CPR is an individual whose experience, education, background and/or training is such that the individual is capable of identifying existing and predictable conditions that may be hazardous or dangerous. The CPR has the authorization to take prompt corrective measures to eliminate these conditions. The CPR shall not be the Crane Operator.
 - 12.18.5.3. The Seller shall submit to the Company for approval evidence that Competent Person Rigger(s) meet minimum job qualifications including demonstrating the knowledge and practical skills required to safely and proficiently execute rigging operations. Such evidence may consist of:
 - 12.18.5.3.1. Valid Rigging Training certification from the National Center for Construction, Education & Resources (NCCER)
 - 12.18.5.3.2. Other documentation or work history that demonstrates the individual's knowledge, practical skills and experience to execute rigging operations.
 - 12.18.5.3.3. Have a minimum of three years of "hands on" experience and demonstrate sufficient skills to apply safe rigging practices and principles.
 - 12.18.5.4. Satisfactorily complete (a score of 80% or higher) Company administered (1) a written or verbal core competency test and (2) a practical (hands-on) examination. Both evaluations cover materials, methods, equipment, techniques, communication, and other items necessary for the safe performance of their specific tasks.
 - 12.18.5.4.1. Demonstrate understanding of both the spoken and written hoisting and rigging language.
 - 12.18.5.4.2. Demonstrate sufficient skills to apply safe rigging practices and principles.
 - 12.18.5.4.3. Determine the load's center of gravity and recognize the importance of load balance and load stability.
 - 12.18.5.4.4. Demonstrate the ability to utilize proper rigging materials and principles.

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12.18.5.4.5. Demonstrate knowledge and skill in the selection, inspection, safe use, and limitations of the following, if applicable, to the employee’s specific job tasks:

<ul style="list-style-type: none"> • Anchor points and deadmen • Synthetic ropes for rigging • Wire rope • Chains • Reeving • Spreader bars and equalizing beams • Synthetic slings • Lifting points • Tuggers and winches (manual and power) • Bars and levers • Come-a-longs • Fiber rope for rigging 	<ul style="list-style-type: none"> • Jacks, jacking systems, and rams • Wire rope slings • Rigging hitches and knots • Hooks, latches and similar attachments • Shackles • Eye bolts • Turnbuckles • Links and rings • Plate clamps • Softeners • Cable dogs/grips • Chain hoists • End fittings including swages, sockets, splices, connectors, clips, and clamps
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12.18.5.4.6. Demonstrate the standard hand signals for controlling crane operations.

12.18.5.4.7. Demonstrate the proper application of tag lines and their importance in safe lifting operations.

12.18.5.4.8. Demonstrate knowledge of the personal protection requirements for safe lift operations including hard hats, gloves, protective footwear and personal fall arrest equipment.

12.18.6. UPF Control of Hoisting and Rigging Equipment

12.18.6.1. Seller shall implement a program for control of hoisting and rigging equipment that includes the following requirements:

12.18.6.1.1. All hoisting and rigging equipment shall meet the minimum requirements of OSHA 29 CFR 1926 Subpart H and ASME B30.

12.18.6.1.2. All hoisting and rigging equipment shall have a certificate of conformance and a documented proof test prior to use on site. Documentation shall be available to the Company upon request.

12.18.6.1.3. Hoisting and Rigging hardware brought on site shall be maintained in a controlled access storage area while not in use and Seller shall maintain an inventory of H/R equipment on site.

12.18.6.2. Normal periodic inspections are within, but not exceeding a period of one year. An inspection report shall be completed and maintained for the service life of the lifting equipment or hardware with documentation of any deficiencies and repairs noted. Documentation shall be available to the Company upon request.

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- 12.18.6.3. Severe or Continuous inspections where lifting equipment or hardware is continually in service are performed weekly, at a minimum, with a written record maintained. Documentation shall be available to the Company upon request.
- 12.18.6.4. Special inspections are to be performed in accordance with the directions and instructions from the Project Rigging Engineer (PRE).
- 12.18.6.5. Quarterly inspections all lifting equipment and rigging hardware, regardless of whether the equipment is currently being used, idle or being stored, is visually inspected and receives a color code of approval, usually with colored vinyl tape or colored wire ties, that are attached to the product, if it passes inspection. The passed, inspected product is approved for use, not withstanding any of the other required inspections, until the next quarter. No written documentation of this inspection is required. The quarterly color codes serve as evidence of this inspection requirement. Inspection intervals and colors are as follows:

QUARTER	MONTHS	COLOR
FIRST	JANUARY, FEBRUARY, MARCH	YELLOW
SECOND	APRIL, MAY, JUNE	GREEN
THIRD	JULY, AUGUST, SEPTEMBER	RED
FOURTH	OCTOBER, NOVEMBER, DECEMBER	BLUE

- 12.18.7. UPF Construction Crane Use and Operation
 - 12.18.7.1. Seller shall submit to the Company for approval a Crane Use and Operations Plan or Procedure by which the Seller will manage the use and operation of cranes on the project. The scope shall include not only conventional crawler, truck and tower cranes, but also alternative lifting devices. Processes to be addressed include: mobilization, commissioning, and delivery inspection, testing, crane operation, maintenance, periodic inspections, safety, recordkeeping, demobilization and exit inspections.
 - 12.18.7.2. The Seller is required to complete required forms and records.
 - 12.18.7.3. Seller shall maintain equipment specific maintenance and inspection files for each piece of lifting equipment on-site. These files shall include (when completed) initial inspections, daily inspections, load tests, periodic inspections, maintenance records, and any other documentation as may be required. Provide these files to the Company upon request.
 - 12.18.7.4. Upon arrival of a crane on site, the Seller shall perform and document an inspection before the equipment is placed into service. Any discrepancies found during the inspection requiring recertification before use are to be corrected. A re-inspection / testing may be required dependant on the nature of the fix. Provide inspection and/or re-inspection/testing documentation to the Company for review upon request.

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- 12.18.7.5. Seller shall perform a pre-operational functional test for each crane prior to initial use. This functional test is to verify correct operation of all control operation systems and mechanisms, correct operation of all instrumentation, monitoring systems and safety systems / warning devices. Although a full load test is not routinely required, except where specified, a load-moment test may be required in order to meaningfully test the crane. Manufacturers commissioning procedures / applicable codes / standards / legislation are to be adhered to as a minimum. Provide pre-operational functional test documentation to the Company upon request.
- 12.18.7.6. Seller shall not load a crane to more than 100% of the rated chart capacity without prior written approval of the crane manufacturer and Company.
- 12.18.7.7. Seller shall perform a daily inspection of the crane and record the results on the applicable Daily Crane Checklist. Alternate lifting devices or systems will require a custom checklist created by the Seller. Perform monthly and/or annual inspections as required. Provide inspection records to the Company upon request.
- 12.18.7.8. Seller shall perform periodic (recorded) crane inspections in accordance with applicable Crane Manufacturer's Specifications and all applicable jurisdictional Codes & Standards. In no case shall the period of inspection exceed one year from the last recorded inspection. Provide inspection records to the Company upon request.
- 12.18.7.9. Seller shall record inspections on the forms noted below:
 - 12.18.7.9.1. CFN-1103 – UPF Mobile Crane Initial/Monthly/Periodic Inspection Record
 - 12.18.7.9.2. CFN-1104 – UPF Mobile Crane Daily/Pre-Use Inspection Checklist
- 12.18.8. UPF Hoisting and Rigging Operation
 - 12.18.8.1. Seller shall consider a Lifting Device as any machine or device used to lift a load from its supporting surface. Such devices include, but are not limited to the following; crane, hoist, hoisting system, chain fall, come-along, hydraulic or mechanical jack, monorail hoist, gantry crane, levers, pulley system, air bag jack, and strand lift system. The term "crane" includes not only conventional cranes, but also other forms of lifting devices such as Derricks, Gin Poles, Strand Jack Systems, Lattice Lifting Gantries, and Jacking Systems & Telescoping Gantries.
 - 12.18.8.2. Seller shall submit to the Company for approval a designated Project Rigging Engineer.
 - 12.18.8.3. For medium or critical lifts the Seller's Project Rigging Engineer (PRE) shall be responsible for:
 - 12.18.8.3.1. Providing technical guidance and support to the project in developing safe work methods and plans for rigging operations.
 - 12.18.8.3.2. The preparation of rigging plans and calculations, specification of rigging materials and lifting equipment.
 - 12.18.8.3.3. Preparation of Lift Data sheets.

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- 12.18.8.3.4. Coordinating with the Company regarding the preparation and the Company approval of plans for medium and critical lifts.
- 12.18.8.3.5. Performing the duties of the “Person in Charge” for medium and critical lifts, ensuring compliance with the developed safe system of work.
- 12.18.8.3.6. Monitoring of general project rigging operations to ensure that all lifts are performed in accordance with the approved rigging plans and procedures.
- 12.18.8.4. The PRE shall meet the following minimum qualifications and requirements:
 - 12.18.8.4.1. A minimum of 2 years of construction or engineering rigging related experience
 - 12.18.8.4.2. Knowledgeable of crane types and interpret crane load charts.
 - 12.18.8.4.3. Knowledgeable of the rigging hardware and their safe usage.
 - 12.18.8.4.4. Knowledgeable of the codes and regulations that apply to lifting and rigging operations.
 - 12.18.8.4.5. Possess drawing skills in order to prepare rigging drawings.
 - 12.18.8.4.6. Knowledgeable of design of spreader and lift beams.
 - 12.18.8.4.7. Possess understanding of soil type and soil bearing capacity
- 12.18.8.5. For each lifting / hauling operation, the Seller shall designate a Person In Charge (PIC) to have overall control on behalf of the organization conducting the operation to ensure implementation of the safe system of work. The PIC shall be on site during operations under their control. The PIC must have adequate training and experience to carry out these duties competently; a person qualified as a Competent Person Rigger (CPR) would meet the criteria to function as the PIC for a low risk lift. For a medium or critical lift, the PIC shall be a PRE. The PIC may have other duties but may not be the Crane Operator for that operation.
- 12.18.8.6. The PIC shall be responsible for:
 - 12.18.8.6.1. The planning of the lifting operation selection of equipment, instruction and supervision as is necessary for the task to be undertaken safely.
 - 12.18.8.6.2. Ensuring that adequate inspection and maintenance of the equipment has been carried out.
 - 12.18.8.6.3. Identifying defects and making necessary repairs or replacements.
 - 12.18.8.6.4. The coordination, direction and control of the lifting and/or hauling operations.
 - 12.18.8.6.5. Stopping the operation whenever an unsafe condition is identified or suspected or the operation is inconsistent with the plan.
- 12.18.8.7. Seller shall plan all hauling and lifting operations in accordance with the requirements specified herein. Seller shall address the following when developing haul/lift plans and shall categorize plans in accordance with the criteria and descriptions delineated in **Table 1 and Table 2.**

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- 12.18.9. Low Risk Lifts
 - 12.18.9.1. Planned and executed using best rigging practice by the PIC and Qualified Operator (QO).
 - 12.18.9.2. Prior to lifting, the characteristics of every low risk lift are to be entered into a Daily Lift Record, CFN-1088 maintained by the responsible foreman / supervisor.
 - 12.18.9.3. PIC shall be a Qualified Rigger that the Rigging Supervisor (RS) determines is qualified to be in charge of low-risk lifts by virtue of experience and technical knowledge. A person qualified as a CPR may be a PIC for low-risk lifts.
- 12.18.10. Medium Risk Lifts
 - 12.18.10.1. Planned by the PRE
 - 12.18.10.2. Medium Lift Plan to include the following:
 - 12.18.10.2.1. UPF Typical Haul/Lift Plan, CFN -1089
 - 12.18.10.2.2. UPF Lift Data Sheet—Single Crane Pick and Set, CFN -1090
 - 12.18.10.2.3. UPF Lift Data Sheet—Two Crane Pick and Set, CFN -1091 (if required)
 - 12.18.10.2.4. UPF Lift Data Sheet—Two Crane Upending, CFN -1100 (if required)
 - 12.18.10.2.5. Crane data sheets—Load and Range charts
 - 12.18.10.2.6. Rigging sketches showing all rigging hardware (slings, shackles, lifting beams, etc.)
 - 12.18.10.2.7. Layout sketch showing the position and travel path of haul, hoisting equipment, lift crane(s), initial location of the item to be lifted, and the final set position of the lifted item.
 - 12.18.10.2.8. Elevation sketch minimum boom and obstacle clearances
 - 12.18.10.2.9. Sketch showing location of underground utilities, overhead utilities and obstacles that could affect haul/rigging operations.
 - 12.18.10.2.10. Rigging load factor calculations (including impact factors)
 - 12.18.10.2.11. Ground bearing pressure calculation with required crane matting
 - 12.18.10.2.12. UPF Pre-Lift Safety Checklist, CFN -1092
 - 12.18.10.2.13. UPF Hoisting and Rigging Hazard Evaluation, CFN -1093
 - 12.18.10.2.14. UPF Pre-Lift Brief, CFN -1094
 - 12.18.10.2.15. Crane certifications
 - 12.18.10.2.16. Rigging certifications—Proof test documents and certificate of conformance
 - 12.18.10.2.17. Operator qualifications (copy of NCCCO card)
 - 12.18.10.3. Medium Risk Lift Plans shall be submitted to the Company for approval prior to beginning work.

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- 12.18.11. Critical Risk Lifts
 - 12.18.11.1. Planned by the PRE
 - 12.18.11.2. Critical Lift Plan to include the following:
 - 12.18.11.2.1. UPF Typical Haul/Lift Plan, CFN -1089
 - 12.18.11.2.2. UPF Critical Lift Plan Checklist, CFN - 1101
 - 12.18.11.2.3. UPF Lift Data Sheet—Single Crane Pick and Set, CFN -1090
 - 12.18.11.2.4. UPF Lift Data Sheet—Two Crane Pick and Set, CFN -1091 (if required)
 - 12.18.11.2.5. UPF Lift Data Sheet—Two Crane Upending, CFN -1100 (if required)
 - 12.18.11.2.6. Crane data sheets—Load and Range charts
 - 12.18.11.2.7. Rigging sketches showing all rigging hardware (slings, shackles, lifting beams, etc.)
 - 12.18.11.2.8. Layout sketch showing the position and travel path of haul, hoisting equipment, lift crane(s), initial location of the item to be lifted, and the final set position of the lifted item.
 - 12.18.11.2.9. Elevation sketch minimum boom and obstacle clearances
 - 12.18.11.2.10. Sketch showing location of underground utilities, overhead utilities and obstacles that could affect haul/rigging operations.
 - 12.18.11.2.11. Rigging load factor calculations (including impact factors)
 - 12.18.11.2.12. Ground bearing pressure calculation with required crane matting
 - 12.18.11.2.13. UPF Pre-Lift Safety Checklist, CFN -1092
 - 12.18.11.2.14. UPF Hoisting and Rigging Hazard Evaluation, CFN -1093
 - 12.18.11.2.15. UPF Pre-Lift Brief, CFN -1094
 - 12.18.11.2.16. Crane certifications
 - 12.18.11.2.17. Rigging certifications—Proof test documents and certificate of conformance
 - 12.18.11.2.18. Operator qualifications (copy of NCCCO card)
 - 12.18.11.3. Critical Risk Lift Plans shall be submitted to the Company for approval prior to beginning work.
- 12.18.12. Hoisting and Rigging Lift Data Sheet
 - 12.18.12.1. A Lift Data Sheet is a tabular sheet collating all the essential elements of the lifting operation. It is the primary record for medium lifts and one element of a critical lift plan. Data sheets contain details of the configuration of the crane(s), capacity deductions to be taken, load weight and Center of Gravity (CG) details, rigging to be used, operating radii, crane capacities, etc.
 - 12.18.12.2. Seller shall utilize the applicable forms below in all Haul and Lift Plans:
 - 12.18.12.2.1. CFN -1089, UPF Typical Haul/Lift Plan
 - 12.18.12.2.2. CFN -1090, UPF Lift Data Sheet—Single Crane Pick and Set
 - 12.18.12.2.3. CFN -1091, UPF Lift Data Sheet—Two Crane Pick and Set
 - 12.18.12.2.4. CFN -1100, UPF Lift Data Sheet—Two Crane Upending

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Table - 1

UPF LIFTING OPERATIONS RISK CATEGORIZATIONS		RISK CATEGORY		
CRITERIA	DESCRIPTION	Low	Medium	Critical
Payload Weight	0 tons to less than 10 tons	X		
	10 tons to less than 50 tons		X	
	50 tons and above			X
Chart Capacity	Lifts at less than 75% of chart	X		
	75% to less than 90%		X	
	90% and above			X
Hoist Line Pull	Lifts using less than 75% of hoist line pull	X		
	75% to less than 90%		X	
	90% and above			X
Tandem Lifts	Any two crane lift			X
	Any lift that requires two pieces of equipment (Forklift, Trackhoe, etc.)			X
	One lift powered and manual (crane and chain hoist etc.)			X
Special Lifting Devices	Cranes where superlift tray is required for the lift		X	
	Gin poles/stiffleg and guy derricks			X
	Hydraulic gantries			X
	Strand jacks or climbing jacks			X
	Custom or Specialized rigs			X
Specialized Rigging	Custom below the hook hardware		X	
	Complex rigging arrangements (including "xmas-treeing.")		X	
Specialized Crane Use	Lifts using short outrigger spreads or narrow track centers		X	
	Lifts not using 360 degree charts		X	
	Topping or tailing with a single crane using two drum hoist			X
Electrical Hazards	Lifting over any power line (regardless of clearance)			X
	Lifts required to breach the safe limit of approach or 20ft boundary			X
	Lifts over motor control centers or switch gear			X
	Lifts requiring the assistance of a utility company			X
Buildings Structures live plant	Lifting over occupied buildings or operating facilities			X
	Lifting over process pipe racks or plant equipment			X
	When setup over critical underground services			X

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Table - 2

ONSITE HAULING OPERATIONS RISK CATEGORIZATIONS		RISK CATEGORY		
CRITERIA	DESCRIPTION	Low	Medium	Critical
Payload Weight	0 tons to less than 10 tons	X		
	50 tons to less than 100 tons		X	
	100 tons and above			X
Transporter Capacity	Lifts at less than 75% of trailer carrying capacity	X		
	75% to less than 90%		X	
	90% and above			X
Payload Size	Width of load or trailer < 16ft	X		
	Width of load or trailer > 16ft		X	
Clearances	Height within 3' vertically of overhead obstacles		X	
	Height within 6" vertically of overhead obstacles			X
	Any part of load/trailer within 6" laterally of critical plant equipment			X
	Within 3' vert. or 6" laterally of safe limit of approach to power lines			X
Stability	Angle of stability > 8° to 12°		X	
	Angle of stability 5° to 8°			X
	Load has high C of G relative to width (>2.5:1)			X
	4-point hydraulic suspension arrangements			X
	Large sail area			X
Arrangements	Use of Holland or similar dollies			X
	Use of independent dollies with/without turntables			X
	Skid / roller / skate systems			X
Loading	Axle loads > 15 tons		X	
	Shadow pressure > 5ksf		X	
	Shadow pressure > 5ksf			X
	Crossing critical structures / underground			X

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- 12.18.12.3. The haul dimensional and weight definitions described in Table 1 and Table 2 require haul studies and planning for medium and critical movement within the jobsite property.
 - 12.18.12.4. The Safe Limit of Approach is the closest permissible distance between a power source and any part of the load or the equipment being used to move it.
 - 12.18.12.5. The Company's standards relating to the Safe Limit of Approach are those of the U.S. Occupational Safety and Health Administration as defined in the Code of Federal Regulations 29 CFR 1910.333.
 - 12.18.12.6. In summary, these limits are defined as:
 - 12.18.12.6.1. 0 to 50 kV to ground – 10 feet (3.05m)
 - 12.18.12.6.2. Over 50 kV to ground – add 4 inches (0.1m) for every 10 kV
 - 12.18.12.6.3. If the haul and/or lift equipment is in transit with its structure lowered, the clearance limit is 4 feet (1.22m) up to 50 kV plus, 4 inches (0.1m) for every 10 kV over 50 kV.
 - 12.18.12.7. Refer to CFR 1910.333 for additional details.
 - 12.18.12.8. Medium Risk Haul Plans shall be submitted to the Company for approval prior to beginning work.
 - 12.18.12.9. Critical Risk Haul Plans shall be submitted to the Company for approval prior to beginning work.
 - 12.18.12.10. Seller shall utilize the forms noted below:
 - 12.18.12.10.1. CFN-1143, UPF Daily Lift Record
 - 12.18.12.10.2. CFN -1089, UPF Typical Haul/Lift Plan
 - 12.18.12.10.3. CFN -1090, UPF Lift Data Sheet—Single Crane Pick and Set
 - 12.18.12.10.4. CFN -1091, UPF Lift Data Sheet—Two Crane Pick and Set
 - 12.18.12.10.5. CFN -1092, UPF Pre-Lift Safety Checklist
 - 12.18.12.10.6. CFN -1093, UPF Hoisting and Rigging Hazard Evaluation
 - 12.18.12.10.7. CFN -1094, UPF Pre-Lift Brief
 - 12.18.12.10.8. CFN -1100, UPF Lift Data Sheet—Two Crane Upending
 - 12.18.12.10.9. CFN- 1101, UPF Critical Lift Plan Checklist
 - 12.18.12.10.10. CFN- 1102, UPF Haul Plan Checklist
- 12.19. Lead
- 12.19.1. Perform work on lead-containing materials in accordance with 29 CFR 1926.62.
 - 12.19.2. Before starting work involving lead materials, submit for Company approval, a Lead Compliance Plan.
 - 12.19.3. Engineering controls (e.g., wet methods, vacuum power tools, ventilation and containment structures) are mandatory regardless of PPE used.
 - 12.19.4. All painted surfaces at Y-12 are suspect for lead-containing paint.
 - 12.19.5. The Seller's Competent Person shall be on-site during work activities involving lead materials.
 - 12.19.6. Before generating a waste stream containing lead, ensure a waste accumulation area is established.

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12.20. Mercury and PCBs

12.20.1. Low levels of mercury and PCBs are detectable in the soil and building materials/components in some areas of Y-12. When the Seller's work activities create a potential for exposure to mercury or PCB's, the Seller's ES&H Plan shall describe how worker exposure monitoring for these constituents will be addressed, and how compliance with applicable mercury and PCB regulations will be achieved. Painted surfaces at Y-12 are suspect for Polychlorinated Biphenyl (PCB) containing paint. Before starting work involving PCB materials, submit for Company approval, a PCB Compliance Plan. Hot work is prohibited prior to removal of the PCB coating on PCB coated surfaces. Before generating a waste stream containing mercury and PCB's, ensure a waste accumulation area is established.

12.21. Refrigerants

12.21.1. The Seller shall comply with 40 CFR 82 and State regulations when handling or dispositioning equipment containing refrigerant. Only trained and certified personnel shall breach a system containing refrigerants. Seller shall provide a record of training or certificate upon Company request.

12.21.2. Reserved.

12.21.3. The Seller shall notify the Company twelve (12) workdays prior to the disposal of equipment that contains refrigerant. The Company will recover the refrigerant from the equipment prior to the Seller dispositioning the equipment. The Company will attach a label indicating removal of refrigerant from the equipment.

12.22. Electrical

12.22.1. Seller shall submit an Electrical Safety Program for Company approval for the electrical installation and maintenance operations in accordance with 29 CFR 1910, 29 CFR 1926, Subpart K, the *National Electrical Code* (NFPA 70) and *Standard for Electrical Safety in the Workplace* (NFPA 70E). Seller's qualified electrical inspector shall complete compliance inspections prior to requesting Company AHJ electrical inspection and acceptance of the work.

12.22.2. Seller shall provide ground fault circuit interrupter protection for cord sets, receptacles, and electrical tools including connections to generators and equipment connected by cord and plug for use by workers.

12.22.3. Seller shall ensure that work is performed only in areas and at times where adequate illumination exists. The Seller shall provide all lighting and associated electrical items necessary and/or required to safely perform work.

12.22.4. Electrical equipment shall be listed, labeled, and approved by a Nationally Recognized Testing Laboratory (NRTL) for intended purpose, or inspected and approved for use, by the Seller's electrical AHJ in accordance with and as described in NFPA 70 & 70E, or equivalent.

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12.22.5. Seller shall provide the PPE for electrical installation, voltage checks, testing and maintenance operations in accordance with 29 CFR 1910, 29 CFR 1926, National Electrical Code, and (NFPA 70E). Company will supply electrical work protective clothing where needed in radiological controlled areas.

12.22.5.1. Clothing and PPE for confirmation of isolation (absence of voltage checks):

12.22.5.1.1. Less than 300 volts

12.22.5.1.1.1. 100% long-sleeve cotton coveralls, 100% long-sleeve cotton shirt and pants,

12.22.5.1.1.2. long-sleeve scrubs or RAD coveralls,

12.22.5.1.1.3. safety glasses with side shields,

12.22.5.1.1.4. leather shoes,

12.22.5.1.1.5. insulated gloves with protectors, and

12.22.5.1.1.6. insulated tools;

12.22.5.1.2. Greater than 300 volts but less than 600 volts

12.22.5.1.2.1. 100% cotton coveralls worn under electrical flame-resistant (FR) coveralls (marked on back with ATPV 7), or electrical FR pants and shirt (marked on back with ATPV 11), or electrical RAD FR coveralls (marked on back with ATPV 11),

12.22.5.1.2.2. NOTE: 100% cotton, wool or silk, non-synthetic material or FR shall be worn under FR clothing.

12.22.5.1.2.3. leather shoes,

12.22.5.1.2.4. safety glasses with side shield,

12.22.5.1.2.5. electrical rated FR face shield,

12.22.5.1.2.6. insulated gloves with protectors, and

12.22.5.1.2.7. insulated tools.

12.23. Hot Work

12.23.1. Perform welding, burning, and hot work in accordance with 29 CFR 1926, Subpart J, ANSI Z 49.1 and NFPA 51B 5.2.2.

12.23.2. The Seller shall initiate a Hot Work Permit and provide to the Company for authorization before performing any flame or spark producing work.

12.23.3. Hot work shall be performed in designated areas or permitted areas only.

12.23.4. Before initiating hot work, remove:

12.23.4.1. Combustibles within 35 feet or provide non-combustible cover, and

12.23.4.2. Flammable liquids within 50 feet.

12.23.4.3. Review the AHA to ensure all controls have been implemented.

12.23.5. Return expired Hot Work Permit to the Company.

12.23.6. Seller's individual supervising Hot Work activities, employees performing Hot Work and Fire Watches shall complete Company-provided training for Welding and Burning.

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- 12.23.7. Utilize the forms noted below for work associated with Hot Work:
 - 12.23.7.1. CFN 1137 – UPF Designated Area Tracking and Inspection Log
 - 12.23.7.2. CFN 1138 – UPF Designated Area for Hot Work Placard
 - 12.23.7.3. CFN 1139 – UPF Hot Work Permit
 - 12.23.7.4. CFN 1140 – UPF Hot Work Permit Tracking Log
- 12.23.8. Use fire retardant, plastic/fabric tarpaulins, tested in accordance with NFPA 701, *Methods of Flame Propagation of Textiles and Films to Protect Personnel and Property During Spark or Flame Producing Work*. Framing material used to support such coverings shall be non-combustible. FR clothing shall conform to ASTM D 3659 and ASTM F 1506. Spark or flame producing activities that requires fall protection (e.g., body harness) shall conform to ANSI Z359.1, and ASTM F887-04.
- 12.23.9. Provide a dedicated, trained fire watch during, and for a minimum of 30 minutes after, spark/flame producing work. Torch applied roofing operations requires the fire watch during and for a minimum of 2 hours after, spark/flame producing work. Fire watches shall attend Company-provided training, maintain proximity necessary to observe the safety of the person(s) performing the hot work, and be able to respond in case of an emergency.
- 12.23.10. Determine the location of the nearest operating fire alarm pull station and Y-12 telephone or Y-12 communication radio.
- 12.23.11. Use dust-reducing methods, such as vacuuming, wetting, or building an enclosure during cutting or grinding operations.
- 12.23.12. Comply with the requirements of 29 CFR 1926.62 when drilling, cutting, grinding, or welding existing painted surfaces.
- 12.23.13. Comply with the requirements of 29 CFR 1926, Subpart J and 29 CFR 1926.1126 when welding, cutting, grinding, or heating galvanized or stainless steel.
- 12.23.14. Provide point source exhaust ventilation when welding stainless steel material and alloys.
- 12.23.15. Ensure AHA contains analysis of welding, cutting, and grinding using clothing ignition risk factors. In determining the need for PPE for flame and thermal hazards the following risk factors shall be considered:
 - 12.23.15.1. Amount and duration of open flame, sparks, molten by-products.
 - 12.23.15.2. Potential for accidental contact with direct flame or hot surfaces.
 - 12.23.15.3. Position/proximity of worker relative to flames, sparks, or molten by-products.
 - 12.23.15.4. Risk factors created by PPE worn, such as heat stress, physical and psychological stress, impaired vision, mobility, and communications.
 - 12.23.15.5. Risk factors shall be identified and controlled or eliminated through engineering and administrative controls. Where the risk factors cannot be eliminated or controlled, PPE is required. If clothing ignition hazards still exist, FR protective clothing shall be used as secondary protection. Leathers such as gauntlets, aprons, and similar protective items shall be used for primary protection, when clothing ignition hazards are identified through the hazards analysis process.
- 12.23.16. Personnel performing welding, cutting, grinding, and hot work (including fire watch personnel and proximate workers) in a radiologically controlled area shall wear FR PPE and outer FR-treated anti-contamination clothing.

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- 12.23.17. Thoriated tungsten electrodes used in tungsten inert gas welding are prohibited from use unless approved otherwise by the Company. Where authorized for use, a Radiological Work Permit and Radiological Worker II Training are required.
- 12.24. Asbestos Demolition or Renovation
- 12.24.1. Seller shall possess a Tennessee General License for Asbestos Abatement to perform asbestos work and be accredited per the requirements of Tennessee Rule 1200-01-20. All asbestos workers and asbestos supervisors shall be trained via a Tennessee accredited training provider and shall be individually accredited per 1200-01-20. Perform work in accordance with 29 CFR 1926.1101, *Asbestos*, and 40 CFR Part 61, Subpart M, *National Emission Standard for Asbestos*, and TN 1200-3-11 and 1200-01-20.
- 12.24.1.1. For asbestos abatement renovations less than 160 square feet or less than 260 linear feet, including incidental work disturbing asbestos-containing material (ACM), Seller shall request an Asbestos Removal Authorization (ARA) from the Company three (3) workdays in advance of need.
- 12.24.1.2. For demolition of a structure, regardless if asbestos is present or for renovations involving the abatement of greater than 160 square feet or 260 linear feet the Seller shall request a Notification of Asbestos Demolition or Renovation (NoDR) at least twenty (20) workdays in advance of work start.
- 12.24.1.3. Seller shall submit an Asbestos Work Plan (AWP) and AHA for Company approval.
- 12.24.1.3.1. Seller shall prepare a Work Plan that meets the requirements of 29 CFR 1926.1101, *Asbestos*, specifically Items (g) and (h), and shall submit it to Company to review before starting Work. If Seller chooses to use alternative work practices and methods for the removal of thermal system insulation (TSI) and/or surfacing asbestos containing material (ACM) or presumed materials (PACM), the decision shall be certified in writing by a certified industrial hygienist or licensed professional engineer who is an accredited (per the State of Tennessee) project designer. Any project related activities that employ alternative work practices and methods shall meet the requirements in 29 CFR 1926.1101(g)(6). The plans detailing compliance and alternative methods must be reviewed by Company before any work with ACM or PACM is to begin.
- 12.24.1.3.1.1. Any negative exposure assessments (NEA) developed by the Seller shall be submitted to and approved by the Company prior to making any applicable work practices changes related to using NEAs. Approval by Company does not constitute permission to negate other applicable requirements of federal, state, or local asbestos regulations.

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- 12.24.2. The Company will notify the State of Tennessee of the required NoDR. The Seller shall provide the following information to the STR for the NoDR:
 - 12.24.2.1. Name, address, contact person, and phone number of the abatement licensee and waste transporter,
 - 12.24.2.2. Approximate amount of ACM,
 - 12.24.2.3. Initial exposure assessment,
 - 12.24.2.4. Scheduled dates for removal,
 - 12.24.2.5. Description of work methods,
 - 12.24.2.6. Intention to leave any non-friable ACM in place during demolition, and
 - 12.24.2.7. Waste disposal site.
- 12.24.3. The AWP shall identify specific work requirements, monitoring, PPE, and training. The Seller's Competent Person shall brief and oversee the personnel entering the work area and enforce all requirements. The Competent Person shall maintain an entry/exit log for regulated areas.
 - 12.24.3.1. Seller shall make available, within 24 hours and upon written request from Company, any records concerning asbestos handling, including but not limited to, entry/exit logs, exposure records and training records, in a manner that does not breach confidentiality, as described in 29 CFR 1926.33 "Access to Employee Exposure and Medical Records."
- 12.24.4. The AWP shall specifically require the following:
 - 12.24.4.1. Workers shall wear respirators when donning protective clothing.
 - 12.24.4.2. Provide workers with disposable coveralls, head and foot coverings, gloves, and eye protection for Class I-IV activities. Workers shall wear protective clothing when performing asbestos work or when friable asbestos is present. Gloves are required when handling broken or loose pieces of non-friable asbestos.
 - 12.24.4.3. Establish the regulated area prior to pre-cleaning activities, enclosure construction, or other activities that could disturb the ACM.
 - 12.24.4.4. Where feasible, a 50-ft perimeter shall be established around the work area. Only those individuals engaged in the asbestos removal process and having the appropriate training are permitted within the work area. The perimeter shall be delineated with construction fences or other Company-approved barriers and shall have asbestos warning signs affixed at a minimum of approximately 50-ft intervals along the perimeter barrier. Such barriers and signs shall remain until deemed unnecessary by Company. Otherwise flag off entrances and approaches to the area with barrier tape (Asbestos-Danger) and signs.
 - 12.24.4.5. Monitor personnel and area when there is not a "negative exposure assessment" (include initial exposure assessment with the AWP).
 - 12.24.4.6. Use portable hand tools equipped with a HEPA filtered exhaust ventilation to drill, cut, or otherwise disturb ACM.
 - 12.24.4.7. Mandatory use of wet method for abatement unless otherwise approved by the Company.
 - 12.24.4.8. Filter water from the abatement work through a 5-micrometer filter system before discharging to a Company-designated sewer.

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- 12.24.4.9. Provide a two-foot square viewing window (Plexiglas) in enclosures approximately five feet above ground level at a location designated by the STR.
- 12.24.4.10. Provide a negative pressure air-filter system with a minimum of one air change every fifteen minutes (4 per hour) at a minimum of 0.02 column inches of water pressure differential relative to outside pressure. The system shall operate continuously (24 hours a day) until final clearance is approved. Air leaving the system shall be vented to the outside unless otherwise approved by the Company.
- 12.24.4.11. Provide a decon unit with shower contiguous to the work area. Use of a remote decon unit shall be approved in advance by the Company. Workers shall not remove respirators until in the shower. Any glove bag ACM removal of greater than 25 linear feet requires a decon unit. Shower wastewater filter system requires Company approval. Discharge of wastewater into the storm or sanitary sewer system requires Company authorization. Seller shall allow four (4) workdays for Company authorization of such discharge.
- 12.24.4.12. Remove Cat I and II (non-friable) ACM which can become friable as a result of work activity, excluding roof coating and paint, unless specified otherwise.
- 12.24.4.13. Regarding the removal of asbestos material from outdoor sources, Seller shall, as applicable, secure doors, windows, or other openings (such as ventilation units for buildings) with a minimum of 4-mil-thick plastic if outdoor work is within 100 ft of such areas.
- 12.24.5. Personnel Monitoring:
 - 12.24.5.1. Class I activities shall be monitored daily whenever work is being performed. Monitor 25% of each group of representative workers entering the regulated area for excursion and permissible exposure limits.
 - 12.24.5.2. Class II and III activities shall be monitored for three days with a reduction to one day per week if results remain below the Permissible Exposure Limit (PEL).
 - 12.24.5.3. Submit test results to Company for information.
- 12.24.6. Area Monitoring:
 - 12.24.6.1. Conduct daily monitoring for the full work shift inside the negative pressure enclosure.
 - 12.24.6.2. Take at least four samples per 5,000 square feet of enclosure and three samples outside the enclosure. For each waste load out, take an additional sample at that location outside the enclosure.
 - 12.24.6.3. Conduct daily full shift monitoring for negative pressure glove bag or mini-enclosure operations. Collect three samples inside the regulated area and three samples outside the regulated area inside the protection zone.
 - 12.24.6.4. Class II and III activities shall be monitored daily for the full shift. Collect three samples inside the regulated area and if located outside of a building one sample upwind and two downwind.
 - 12.24.6.5. After abatement, area must pass a visual inspection, review, and analysis of clearance samples by Seller's Competent Person per 29 CFR 1926.1101.
 - 12.24.6.6. Submit area monitoring sample results to Company for information

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- 12.24.7. Engineering controls are mandatory, regardless of PPE used.
- 12.24.8. Material used for abatement shall equal:
 - 12.24.8.1. Poly used for enclosures shall have a flame spread index of five and a smoke development index of 30-110 in accordance with UL Test 723.
 - 12.24.8.2. Surfactant or amended water shall be specifically manufactured for use in ACM abatement.
 - 12.24.8.3. Company approval is required for use of wood enclosure. If approved, wood shall be treated with fire retardant.
 - 12.24.8.4. Bags for disposal shall be 6-mil polyethylene with preprinted markings in accordance with 29 CFR 1926.1101(k) (8) (iii) and 49 CFR 172.
 - 12.24.8.5. Equipment having a HEPA filter shall be tested in accordance with requirements identified in Supplemental Conditions, 12.32, Equipment, and Tools.
- 12.24.9. Seller personnel working with ACM shall be approved for respiratory protection, enrolled in medical surveillance, and shall have received the appropriate level of asbestos training.
 - 12.24.9.1. Medical evaluation and enrollment in a surveillance program is mandatory before granting access to regulated areas.
 - 12.24.9.1.1. Upon request from the Company, Seller shall provide examining physician's documentation acknowledging that information stated in 29 CFR 1926.1101(m) (3) has been received.
- 12.24.10. Seller shall employ an independent testing laboratory to perform air monitoring and testing. Air monitoring will be performed per the requirements identified in 29 CFR 1926.1101 Appendix A, Appendix B, the most current version of OSHA method ID-160, or the most current version of NIOSH Method 7400.
 - 12.24.10.1. Personnel performing air monitoring during abatement activities or for the purpose of final clearance shall be accredited per the Tennessee accreditation requirements for Project Monitors.
 - 12.24.10.2. Seller shall provide to Company documentation of successful completion of the NIOSH 582 course, Tennessee Project Monitor accreditation, and a written air monitoring plan upon request.
- 12.24.11. Personnel performing analysis of airborne asbestos samples shall complete the NIOSH 582 Course. All samples will be analyzed per 29 CFR 1926.1101 Appendix B or the most current version of NIOSH Method 7400. Personnel performing analysis of airborne asbestos samples shall be included in the AIHA Proficiency Analytical Testing Program.
- 12.24.12. Seller shall post sampling results at the work area immediately after obtaining the results but no later than 48 hours after samples were taken. The Seller's Competent Person shall evaluate sample results and initiate any corrective actions. If results exceed the prevalent background level (cannot be > PEL 0.1 f/cc), immediately stop work, extend the boundaries of the regulated area, and notify the STR. Do not continue work until work methods are changed to remediate the problem. Within eight hours of receipt of results exceeding the background level, provide a report the Company for approval describing the problem and the corrective actions taken.

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12.24.13. All insulated materials and /or those materials suspected of containing asbestos must be treated as such until conclusive characterization data has been received and/or an Asbestos Competent Person has inspected the material and through expert knowledge determines the material is free of all asbestos. Materials of concern include but are not limited to; all insulating material, floor tile, ceiling tiles, drywall, siding materials, glues, roof flashing, caulk, and window glazing compound.

12.25. Hearing Protection

12.25.1. Seller shall develop and implement a Hearing Conservation Program that meets ACGIH TLVs and BEI current publication guidelines. Seller's Hearing Conservation Program shall be submitted for Company approval. The program shall include audiometric testing when sound levels exceed ACGIH limits.

12.25.2. The Seller shall ensure that unprotected noise exposure shall not exceed an 8-hour time-weighted average of 85 dBA using a 3dB exchange rate. This applies to the total duration of exposure per workday (8 hours) regardless of whether it is one continuous exposure or a number of short exposures (refer to current ACGIH TLVs for noise). Continuous noise exposure shall not exceed 115dBA or impulse/impact noise exceeding 140dB (peak sound pressure level).

12.25.3. When employees are subjected to sound levels exceeding the ACGIH TLVs for noise, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels below the TLVs, personal protective equipment as required in 29 CFR 1926.101 shall be provided by the Seller and used to reduce sound levels below these TLVs.

12.25.4. The Seller shall determine the boundaries where continuous or intermittent noise is expected to exceed the ACGIH TLVs for noise. The Seller shall enforce the use of hearing protection within those identified boundaries.

12.25.5. The Seller shall maintain current documented exposure assessments for employees performing tasks where sound levels exceed 85dBA and hearing protection is not required.

12.25.6. The Seller shall maintain a list of equipment that exceeds 85dBA noise exposure (either continuous or impulse/impact noise).

12.26. Fall Protection

12.26.1. Seller shall perform all work activities requiring fall protection in accordance with 29 CFR Part 1926 Subpart M. The Seller shall submit a Fall Protection Plan(s) for Company approval, prior to beginning work, that provides for roof work activities, leading edge work, safety net systems, warning line systems and controlled access zones as applicable.

12.26.2. All manufactured equipment utilized for fall protection shall be rated, inspected, and properly implemented in practice.

12.26.3. Evaluate all overhead work for fall exposures and plan and install required fall protection systems prior to assigning the work to employees.

12.26.4. Make maximum use of primary fall prevention systems such as scaffolds, aerial lifts, personnel hoists, etc. These systems shall be equipped with complete working/walking surfaces free of floor openings, with standard guardrail systems in place and a safe means of access.

12.26.5. Seller's ES&H program shall include a 100% fall protection policy that makes provision for secondary fall protection (full-body harness) for all employees who are working or traveling more than 6 feet above ground.

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- 12.26.6. Where lifeline systems are used, anchor points shall be capable of supporting at least 5,000 pounds. Lifelines shall be installed and maintained by qualified persons who are competent and possess the rigging knowledge necessary to ensure the integrity and safety factors necessary for lifeline system installation. Lanyards shall be secured to vertical lifelines by rope grabs only. Knots, painters-hitches, or loops are not acceptable. Horizontal lifelines shall have tie-off points at least waist high.
- 12.26.7. When using retractable lifeline devices, the Seller shall secure them by means capable of supporting at least 5000 pounds.
- 12.26.8. The Seller shall require employees to wear an approved safety harness/lanyard system if they work from ladders where the fall exposure is less than 6 feet, and they are unable to maintain 3-point contact.
- 12.26.9. In situations where a fall could result in impalement or other injury (i.e. working over a hot process, operating equipment), the Seller shall ensure that fall protection equipment is utilized regardless of the potential falling distance.
- 12.26.10. The Seller shall ensure that vertical impaling objects such as rebar will have the ends capped with an article such as a block of 2 X 4 inch wood, rebar cap, or other item which adequately covers the impaling end of the object.
- 12.26.11. The Seller shall ensure that personnel traveling from one location to another in elevated positions utilize auxiliary fall protection equipment, such as static lines, perimeter guards, or other suitable means.
- 12.26.12. The Seller shall ensure that a Competent Person inspects personal Fall Protection equipment at least every three months.
- 12.27. Thermal Stress
 - 12.27.1. Seller shall develop and implement a Thermal Stress Program that meets the guidelines in the most recent ACGIH TLV publication, as applicable. Seller's Thermal Stress Program shall be submitted for Company approval.
 - 12.27.2. Seller shall maintain documented assessments for employees performing tasks. Assessments shall be available to the Company upon request.
 - 12.27.3. Ensure that all field employees, especially front line supervisors, are trained on the warning signs/symptoms of early heat or cold related disorders, and instructed on the clothing and work methods best suited to avoid heat and/or cold stress. Stay times shall be developed to reduce the possibility of heat or cold related disorders.
- 12.28. Explosives
 - 12.28.1. Possession and use of explosives are prohibited at Y-12.
- 12.29. Cranes And High Profile Equipment
 - 12.29.1. In addition to the requirements identified in 29 CFR 1926, the following is required:
 - 12.29.1.1. During hazard evaluation, determine grounding requirements for overhead work in proximity to energized lines and for underground work having the potential to come into contact with energized lines.
 - 12.29.1.2. When moving equipment, the booms or masts shall be in a retracted traveling position, and a flagman donned in contrasting color vest that is reflective shall be assigned to direct movement and prevent contact with objects on the ground or overhead.

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- 12.29.1.3. Verify roadway clearances before work start, equipment movement, and after significant weather events. Contact the Field Engineer to verify clearances through security portals and other Y-12 width and height restrictions.
- 12.29.1.4. Seller's ES&H Representative shall be present when equipment is moved from one location to another, and when equipment is near energized electrical conductors or equipment.

12.30. Transportation

- 12.30.1. Flammable liquid tank trucks, refueling vehicles, and other vehicles transporting flammable liquids or gases shall comply with 49 CFR 382.399.
- 12.30.2. All transportation of materials, including waste, shall be performed in compliance with applicable Federal (49 CFR Parts 106 – 180 and 325 – 399) and State of Tennessee requirements. Seller shall demonstrate:
 - 12.30.2.1. Commercial vehicle operators are healthy, unimpaired, observe established regulations and are properly licensed, medically certified, and participate in Workplace Substance Abuse Program.
 - 12.30.2.2. Commercial vehicles are registered, licensed, maintained in a roadworthy condition, operated in a safe manner, have a current annual inspection and are in compliance with the *Federal Motor Carrier Safety Regulations* (FMCSR).
 - 12.30.2.3. Seller has sufficient liability insurance as outlined in the FMCSR.
 - 12.30.2.4. Seller employees engaged in hazardous materials transportation activities possess the requisite training.
 - 12.30.2.5. Loads being transported do not exceed transport vehicle manufacturer's rated capacity and are properly secured.
- 12.30.3. Provide a seat belt for each vehicle passenger and enforce the wearing of seat belts any time a vehicle is in motion. Buses provided for Project transportation may be exempt from this requirement, if authorized by the Company in advance of their use.
- 12.30.4. Ensure that the focus of the site layout for their assigned area(s) involves the separation of pedestrian and vehicle routes from each other, and establishes appropriate roadway design and layout. Pedestrian routes shall be clearly signed and marked.

12.31. Evacuation

- 12.31.1. Observe and participate in notices to evacuate the work area. The Company will establish requirements for evacuation of work-area personnel, as needed, to a designated assembly area. The Seller must account for all personnel on-site at the time of an evacuation.
- 12.31.2. Before evacuating the work area, shut down equipment or make conditions safe unless doing so endangers personnel.
- 12.31.3. Perform evacuation in accordance with Company public address announcements and/or STR instructions.

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12.32. Equipment and Tools

- 12.32.1. Tools and equipment brought to Y-12 shall be used only for the purpose for which they are designed and comply with 29 CFR 1926, Subpart I. Tools and equipment shall be inspected (or certified, such as lift slings) and determined to be adequate for the use intended. Conduct routine inspections to ensure repairs and maintenance are completed to keep items ready and compliant. Defective or otherwise unsafe items shall be tagged "Do Not Use" and immediately removed from the work area to a secure place to prevent inadvertent use. Re-inspect repaired items before reuse. Any deficiencies noted on an inspection record (e.g., small leaks, worn parts) shall be evaluated to ensure its safe operating condition. The evaluation and its resolution shall be documented on the inspection record prior to use. Hand and portable powered tools and other hand held equipment shall comply with 29 CFR 1910, Subpart P.
- 12.32.2. Modifications, replacement parts, or repairs of equipment shall maintain at least the same factor of safety as the original equipment. The manufacturer shall authorize modifications in writing.
- 12.32.3. Submit for information, upon Company request, and maintain a comprehensive log of each power tool and piece of equipment at Y-12.
- 12.32.4. The Seller's ES&H Program shall require that each employee and all lower-tier subcontract employees be briefed on the safe operation of each power tool and piece of equipment that is used by the employee. The briefing shall also include reviewing the vendor-supplied operation and instruction manual for any special conditions or safety warnings. Submit for information, upon Company request, a list of employees who have been briefed.
- 12.32.5. Maintain an on-site file of the operation and instruction manuals for each power tool and equipment. Manuals shall be available for review by the Seller's workforce.
- 12.32.6. Ensure all tools are checked for electrical continuity after repairs, maintain records of all tool inspections and make records available to the Company upon request.
- 12.32.7. Ensure generators and welding transformers are maintained in good condition, the area around generators are maintained free of oil and diesel spills, all rotating components are guarded, grounding is provided, and outlets are in good condition with no exposed conductors.
- 12.32.8. Ensure only properly trained and certified employees use powder-actuated tools and control access to powder-actuated charges. Documentation of relevant employee training and the use of and disposal of charges shall be maintained and made available to the Company. Each cartridge shall be accounted for and properly stored. No live or spent cartridges shall be left on the ground or disposed of in project trashcans or other unauthorized on or off-site container.
- 12.32.9. Ensure that excess flow valves are installed on air manifolds and compressors supplying air to greater than ½ inch inside diameter hoses.
- 12.32.10. Equipment having a HEPA filter requires DOP testing in accordance with ASTM D-2986 and ASME N510 or an equivalent testing approved by the Company before use. Re-testing is required when:
 - 12.32.10.1. HEPA filters are replaced.
 - 12.32.10.2. Negative-air machines (NAMs) with HEPA filters are relocated or moved which could impact performance of the unit. NAM's shall always be re-tested whenever relocated using motorized equipment unless otherwise approved by the Company.

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- 12.32.11. Inspect negative-air machines (NAM) and HEPA vacuums at the initial set-up and at the beginning of each day to ensure the units' seals are not broken and no damage to unit, which would compromise the equipment's function.
 - 12.32.11.1. Negative-air machines are to be DOP tested when they are set into place.
 - 12.32.11.2. Seller to arrange for the Company's Asbestos Coordinator or their designee to inspect all HEPA vacuums and negative-air machines before they are used to ensure receipt of specified testing.
 - 12.32.11.3. Seller's Competent Person shall be responsible for determining if retesting is necessary after any movement / relocation of negative-air machines by means other than motorized equipment. Company reserves the right to require Seller retesting.
 - 12.32.11.4. Provide manufacturer's certification for HEPA filters used at Y-12 for HEPA Vacuums and NAMs to the Company for review, prior to use.
 - 12.32.11.5. Provide copies of DOP testing results for HEPA Vacuums and NAMs to the Company, for review, prior to use.
- 12.33. Scaffolds and Aerial Devices
 - 12.33.1. Scaffolds
 - 12.33.1.1. Use metal planking for all scaffolding. Pressure treated fire retardant lumber painted with a clear intumescent paint may be used where metal scaffolding is inappropriate and only when specifically approved by the Company. Wood platforms shall not be covered with opaque finishes, except that platform edges may be covered or marked for identification.
 - 12.33.1.2. Provide a trained Competent Person to inspect and sign off on scaffold erection prior to initial use, following alteration, and daily thereafter.
 - 12.33.1.3. Scaffold users shall be trained in Scaffold User and Fall Protection.
 - 12.33.1.4. Seller shall comply with 29 CFR 1926, Subpart L.
 - 12.33.1.5. The Seller shall have an acceptable Scaffolding Procedure and use approved scaffold material.
 - 12.33.1.6. Scaffold platforms shall be fully planked or decked out; capable of supporting 4 times the maximum intended load, and all sides protected by a standard guardrail system. The top rail shall be approximately 42 inches above the platform. A mid-rail and 4 inch toe board shall be installed.
 - 12.33.1.7. Seller erected scaffolds where employees are working/passing below shall have planking or netting installed from the platform to the top rail.
 - 12.33.1.8. The Seller shall utilize a scaffold tagging system and shall utilize Company provided tags unless otherwise approved by the Company.
 - 12.33.1.8.1. Red tag to indicate scaffolds under construction or demolition,
 - 12.33.1.8.2. Yellow tag to indicate scaffolds that are complete but have hazards associated with them, and
 - 12.33.1.8.3. Green tag to indicate scaffolds erected to a complete, safe standard.

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- 12.33.1.9. Provide safe access/egress to all levels of scaffolds. Scaffold platform accesses shall be protected to prevent the possibility of accidental fall through utilizing secured access gates.
- 12.33.1.10. The Seller shall have a qualified, professional engineer design all special scaffolds, two point suspension scaffolds, and all scaffolds over 125 feet in height.
- 12.33.2. Aerial Devices
 - 12.33.2.1. Provide a certification that aerial devices used meet the minimum criteria as specified in the following documents and will remain compliant during the course of the work. Seller shall submit certification prior to use.
 - 12.33.2.1.1. 29 CFR 1910, Subpart F
 - 12.33.2.1.2. 29 CFR 1926, Subpart L
 - 12.33.2.2. Perform routine and pre-use inspections of aerial devices
 - 12.33.2.3. Provide maintenance and inspection reports containing the date and signature of a qualified inspector or agency for each aerial device to the Company upon request.
 - 12.33.2.4. Seller's aerial device operators shall be trained and fully qualified. Qualifications shall include, but not limited to physical abilities, knowledge, and skill proficiency based on job functions. Provide evidence of operator training and qualifications to the Company upon request. Company reserves the right to subject Seller's aerial device operators to performance-based verification of minimum equipment operation knowledge and skill levels.
 - 12.33.2.5. Provide a fire extinguisher on all aerial devices.
- 12.34. Concrete
 - 12.34.1. Activities that generate concrete silica dust require appropriate engineering controls (wet methods) or PPE to prevent employee exposure to silica above limits identified in 29 CFR 1926 Subpart Z or the ACGIH TLVs, whichever is lower. Wet methods are recommended to reduce the amount of dust generated.
 - 12.34.1.1. Respirator protection is required when performing dust-producing concrete work unless there is a documented exposure assessment for similar work, which the Company has accepted.
- 12.35. Respiratory Protection
 - 12.35.1. Perform work in accordance with ANSI Z88.2-1992, *Practices for Respiratory Protection*, and OSHA 29 CFR 1910.134, *Respiratory Protection*, and any substance-specific regulation (e.g. 1926.1101, Asbestos).
 - 12.35.2. Limit exposure to toxic and hazardous substances to the permissible exposure limits (PELs) of 29 CFR 1926, Subpart Z or TLVs of the ACGIH, whichever is more protective.
 - 12.35.3. Provide respirators and cartridges that are NIOSH approved.
 - 12.35.3.1. Seller shall maintain manufacturer's approved respirator configuration. Cartridges, air line-hoses, regulators, and other parts are specifically listed as elements that constitute manufacturers' approved configuration.
 - 12.35.3.2. Modifications to respirators or their parts are prohibited.

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- 12.35.4. Provide compressed breathing air when required to provide adequate protection factor. Submit data to the Company demonstrating the air quality meets the ANSI/CGA G7.1 requirements for Grade D breathing air. Provide a thirty (30) day notice to the Company to request Company furnished supplied-air respirator equipment and compressed breathing air.
- 12.35.5. Air-purifying respirators (APR) shall not be worn in oxygen deficient or immediately dangerous to life or health (IDLH) environments.
- 12.35.6. Seller shall provide optical corrections when needed.
- 12.35.7. Seller shall name a qualified supervisor responsible for enforcement, use, care and sanitation of respiratory equipment.
- 12.35.8. Seller shall notify the Company ES&H representative before starting any work that requires respiratory protection.
- 12.35.9. Required records.
 - 12.35.9.1. Maintain respirator protection records in accordance with ANSI Z88.2, ANSI Z 88.6, ANSI Z88.10, and 29 CFR 1910.134 to include:
 - 12.35.9.1.1. Inspection – Inspection dates, findings, and remedial actions for respirators;
 - 12.35.9.1.2. Training – Type of training received, type of respirator equipment, manufacturer of respirator, names and dates of persons trained;
 - 12.35.9.1.3. Fit Testing;
 - 12.35.9.1.4. Medical Surveillance;
 - 12.35.9.1.5. Program Appraisal – Annual Respiratory Protection Program evaluation, findings, outcomes, and actions; and
 - 12.35.9.1.6. Program Surveillance – Spot checks of operations where respirators are in use and findings, outcomes, and actions.
- 12.35.10. Company-furnished respirators
 - 12.35.10.1. For work in radiological areas, Company will furnish respirators, cartridges, fit testing, and appropriate training for Company-furnished respirators (e.g. Mine Safety Appliance (MSA) Ultra Twin Hycar Rubber respirators, 3M-APR only, or equivalent.) Seller shall bear all other costs associated with its employee's use of Company-furnished respirators (e.g., time for training, medicals, fit-test, checkout, returns).
 - 12.35.10.2. Work-specific respirator training (may be accomplished through toolbox meeting) will be provided on storing, controlling, and preparing respirators for laundry prior to use of Company-furnished respirators.
 - 12.35.10.3. Seller shall designate an individual to receive Company supervisor training for the daily storage and checkout of Company-furnished respirators.
- 12.35.11. Inspection
 - 12.35.11.1. Inspect respirator before use to ensure integrity and function.
 - 12.35.11.2. Inspect respirators stored for emergency or rescue use monthly.

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12.35.12. Pre-requisites

- 12.35.12.1. A medical evaluation and physician's approval is required for each employee using respiratory protection. The medical evaluation and physician's approval shall be in accordance with ANSI Z88.6, *American National Standard for Respiratory Protection-Respirator Use-Physical Qualifications for Personnel* and 29 CFR 1910.134 (e), *Medical Evaluation* and shall be updated annually.
- 12.35.12.2. The employee shall complete training that conforms to ANSI Z88.2(8), *Training*, and 29 CFR 1910.134(k) *Training and Information*, and the requirements listed:
 - 12.35.12.2.1. Respirator protection and the criteria for selecting a particular type respirator and filter cartridge;
 - 12.35.12.2.2. Agent for which the respirator was selected;
 - 12.35.12.2.3. Engineering controls and when they are used;
 - 12.35.12.2.4. Characterization;
 - 12.35.12.2.5. Emergency situations;
 - 12.35.12.2.6. Practical exercises to inspect, don, wear, and doff the respirator;
 - 12.35.12.2.7. Clearing the respirator with a positive and negative pressure check;
 - 12.35.12.2.8. Maintenance, storage, recycle, and disposal instructions;
 - 12.35.12.2.9. Instructions for Company-furnished respirators; and
 - 12.35.12.2.10. Regulatory requirements for respirator use.
- NOTE: Update training annually, except where a particular substance requires training that is more frequent.
- 12.35.12.3. Seller employees shall receive a quantitative fit test in accordance with ANSI Z88.10, *Respirator Fit Test Methods* and 29 CFR 1910.134 (f), *Fit Testing*. Perform fit testing for initial fitting and update annually, except where a particular substance requires more frequent fit testing. Workers wearing Company-furnished respirators shall be fit tested by the Company.
- 12.35.12.4. Assigned protection factors are as noted in the following Table 3, *Respirator Assigned Protection Factors*.

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TABLE 3
RESPIRATOR ASSIGNED PROTECTION FACTORS

<u>RESPIRATOR TYPE</u>	<u>ASSIGNED PROTECTION FACTOR</u>
Tight-fitting, half-face, air-purifying	10
Tight-fitting, full-face, air-purifying	50
PAPR* with loose-fitting face piece (6 CFM minimum)	25
PAPR with half-face mask (4 CFM minimum)	50
PAPR – Hood or helmet (6 CFM minimum)	25 / 1000 **
Continuous flow atmosphere supplying airline Hood or helmet (including abrasive blasting helmets)	25 / 1000 **
PAPR with tight-fitting full-face mask (4 CFM Minimum)	1000
Air line, tight-fitting half-face mask, continuous flow	50
Air line, tight-fitting half-face mask, pressure demand	50
Air line, tight-fitting full-face mask, continuous flow	1000
Air line, tight-fitting full-face mask, pressure demand	1,000 ***
Air line with loose fitting hood continuous flow	25
Self-contained breathing apparatus, pressure demand	10,000 ***

NOTE: This is a guide and may not reflect the current NIOSH-assigned protection factors and other OSHA substance-specific standards. Whenever there is a conflict, the most stringent assigned protection factor shall be used.

*PAPR - Powered air-purifying respirator.

** The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an Assigned Protection Factor (APF) of 1000. Without such performance testing data, all other PAPRS and atmosphere supplying respirators with helmet or hood are to be treated as loose-fitting face piece respirators and receive an APF of 25.

*** Self-contained breathing apparatus, pressure demand mode, or air line, tight-fitting full-face mask, pressure demand mode with auxiliary self-contained air supply may be used for immediately dangerous to life or health (IDLH) atmospheres.

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12.35.13. Application

12.35.13.1. Single-use of respirators (one don and doff cycle) is required in radiological areas when prescribed by Company RADCON due to expected levels of airborne radioactivity during the work.

12.35.13.2. The Seller may obtain a waiver from the single-use of respirators from the Company. The Seller may then approve the reuse of respirators for workers provided good work practices are followed to ensure the unit remains serviceable and uncontaminated. Upon removal, the respirator wearer shall place the respirator in a clean plastic bag and store it in a secure location accessible only to the wearer. The Seller shall provide materials for cleaning and disinfecting the respirator to the wearer.

12.35.13.3. Seller shall monitor proper use of respirators.

12.36. Abrasive Blasting/Sand Blasting

12.36.1. Seller shall submit an Abrasive/Sand Blasting Plan for Company approval 16 workdays prior to abrasive blasting using sand or other abrasive material. The Abrasive Blasting Plan shall include consideration of other methods of accomplishment, engineering controls, hazard analysis, and PPE. This Plan shall also address environmental protection controls unless specifically covered in the ES&H Plan.

12.37. Fire Protection

12.37.1. Seller shall comply with the DOE Order 420.1 requirements to minimize:

12.37.1.1. Occurrence of a fire or related event;

12.37.1.2. Fires that cause an unacceptable onsite or offsite release of hazardous or radiological material that could impact the health and safety of employees, the public, or the environment;

12.37.1.3. Unacceptable interruption of vital DOE programs as a result of a fire and related hazards;

12.37.1.4. Property loss from fire exceeding limits established by DOE; and

12.37.1.5. Fire damage to critical process controls and systems, structures and components

12.37.2. The Seller shall meet the requirements of NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*, 29 CFR 1910, *Occupational Safety and Health Standards* and 29 CFR 1926, *Safety and Health Regulation for Construction*, as applicable to fire protection, explosion, Life Safety and Fire Protection Operations emergency response. As a minimum the fire prevention activities shall include the following:

12.37.2.1. Implementation and documentation of a weekly self-inspection program with records maintained. Any deficient conditions identified during self-inspections shall be documented and tracked until corrected. Submit records to the Company upon request.

12.37.2.2. Maintaining access to the site for emergency response vehicles;

12.37.2.3. Using noncombustible panels or flame-resistant tarpaulins or equivalent material approved by the Company for temporary enclosures;

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- 12.37.2.4. Controlling the use of ordinary combustible materials (e.g., wood, paper, plastics, etc.), including transient combustibles, such that their accumulation does not present an unacceptable increase in the fire risk to facilities or personnel. Combustible materials are limited to the quantity required for current needs and are appropriately separated from ignition sources;
- 12.37.2.5. Storage of Class I and II flammable/combustible liquids shall not exceed 60 gallon within 50 ft of the structure. At point of final use, these liquids shall be kept in approved safety containers;
- 12.37.2.6. Collecting, storing and disposing of combustible waste and/or refuse to prevent unsafe conditions.
 - 12.37.2.6.1. Maintain a housekeeping effort to avoid accumulation or storage of combustible waste inside or adjacent to buildings being constructed.
 - 12.37.2.6.2. Small, office-type receptacles for combustible waste and receptacles of 40 gal. capacity and smaller need not be metal and do not require self-closing lids when used in non-construction activity areas.
 - 12.37.2.6.3. UL listed/FM approved metal receptacles with self-closing lids are used for collection of flammable or combustible liquid soaked clothing, rags, or waste.
 - 12.37.2.6.4. To facilitate the ALARA (as low as reasonably achievable) concept in rad-controlled areas, combustible waste (other than oil-soaked waste) may be collected in receptacles constructed of combustible materials (e.g., plastic bags supported by open metal frames).
- 12.37.2.7. Minimizing temporary storage of combustible construction or packing materials in unprotected structures under construction or alteration;
- 12.37.2.8. Maintaining a minimum distance of 30 feet for yard storage of combustible construction materials from the structure under construction or alteration;
- 12.37.2.9. Where automatic sprinkler protection is to be provided, placing it in service as soon as possible and prior to building occupancy;
- 12.37.2.10. Installing electrical wiring and equipment for light, heat or power purposed per the requirements of NFPA 70, *National Electrical Code*. The electrical distribution for each temporary structure shall be arranged such that the energy can be shut off by a single switch readily identified for that purpose;
- 12.37.2.11. Keeping electrical switchgear rooms free of transient combustibles and combustible storage;
- 12.37.2.12. Using plastic sheeting, blotter paper, etc. for contamination control listed by an approved NRTL for compliance with the requirements of NFPA 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*;
- 12.37.2.13. Limiting the use of plastic pallets to products listed by an approved NRTL. In addition, use of plastic pallets shall be approved by the Company on a case-by-case basis and shall be in accordance with restrictions of the FHA and DSA, as applicable; and

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- 12.37.2.14. Restricting use or storage of combustible pallets inside buildings in areas without automatic sprinkler protection, unless approved otherwise by the Company;
 - 12.37.2.14.1. Idle combustible pallets inside buildings are not stacked more than 6 feet high. Each pile of no more than four stacks of pallets is separated from other pallet piles by at least 8 ft of clear space. (Note: Compliance is also required with the individual requirements for specific buildings, which may be more restrictive.)
- 12.37.3. Fire Barrier
 - 12.37.3.1. Passive fire protection features shall not be disturbed without Company approval. Passive fire protection features include fire barriers (walls, floors, roofs, and ceilings), fire door and fire window assemblies, fire dampers, fire stops at penetrations, and structural fireproofing materials/assemblies.
- 12.37.4. Temporary Facilities
 - 12.37.4.1. Temporary structures, partitions, or enclosures shall comply with the following:
 - 12.37.4.1.1. Framing and/or scaffolding material shall be noncombustible, or shall consist of pressure treated fire retardant lumber listed by an approved NRTL, or shall consist of lumber painted with a clear intumescent paint listed by an approved NRTL, unless otherwise approved by the Company.
 - 12.37.4.1.2. Plastic sheeting material or fabric used for protective coverings, partitions or enclosures shall be fire retardant material listed by an approved NRTL for compliance with the requirements of NFPA 701, *Standard Methods of Fire Tests for Flame-Resistant Textiles and Films*.
 - 12.37.4.1.3. Where automatic sprinkler protection, means of egress, and/or emergency lighting is impaired, notify the Company for determination on the need for an interim Compensatory Measure, and
 - 12.37.4.1.4. All temporary structures or enclosures shall be provided with an appropriate number, type and size of portable fire extinguishers per the applicable requirements of NFPA 10, *Standard for Portable Fire Extinguishers*.
 - 12.37.4.2. Requirements for Temporary Enclosures
 - 12.37.4.2.1. Temporary enclosures erected within a facility shall not be supported by piping arrangements designed for automatic sprinkler systems and other fire protection equipment and shall not interfere with or block such equipment's ability to function as designed;
 - 12.37.4.2.2. Combustible materials are not stored within the enclosure;
 - 12.37.4.2.3. Flammable and/or combustible liquids are kept to an absolute minimum and are stored in and dispensed from UL listed/FM approved safety cans;

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- 12.37.4.2.4. Combustible materials that are used in the enclosure operations (e.g., rags, paper products, etc.) are removed from the enclosure immediately after use or transported and stored in approved metal containers with lids. Combustible waste is removed from the enclosure after each work shift;
- 12.37.4.2.5. Exits are kept unobstructed at all times; and
- 12.37.4.2.6. If enclosure is to be utilized as a Fabrication area with welding/hotwork, area must be permitted as a Fixed Weld Shop.
- 12.37.4.3. Requirements for Tents
 - 12.37.4.3.1. Large tents (designed for use by 10 or more persons) shall be considered acceptable for temporary use where the tent fabric has been manufactured to comply with the flame retardant requirements of Title 19 of the State of California Code of Regulations. Each section of top and sidewall in large tents shall have a durable label permanently affixed to indicate that the fabric has been approved and listed by the California State Fire Marshal.
 - 12.37.4.3.2. Tents erected for long term use (7 days or longer) shall require written approval by the Company and shall be manufactured and arranged to comply with the requirements identified in both NFPA 101, *Life Safety Code*, and the Standard Fire Prevention code, edition as adopted by the State of Tennessee. Tent fabric shall be manufactured to comply with the requirements for flame resistance as directed in NFPA 701, *Standard Methods for Fire Tests for Flame Propagation of Textiles and Films*.
 - 12.37.4.3.3. Deviations from the above requirements shall be approved in writing by the Company.
- 12.37.5. Operational Fires
 - 12.37.5.1. Operational Fires are restricted unless written approval is granted by the Y-12 Area Office of DOE/NNSA. The request for such approval shall be processed through the Company.
 - 12.37.5.1.1. Operational Fires are considered fires in open pits; fires for burning debris resulting from land-clearing activities for new structures and road construction; and the open burning of non-contaminated, chemically untreated, wooden construction waste, wooden pallets, and cleared brush/stumps not associated with actions designed to mitigate potential wildland fires.

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12.37.6. Fire Patrols

- 12.37.6.1. Seller-furnished fire patrols shall be instituted, where required by the Company, to increase the level of protection within an area because of ongoing activities, or lack of impaired fire protection measures (passive or active).
- 12.37.6.2. Personnel performing fire patrol duties shall be designated and instructed in the following subjects.
 - 12.37.6.2.1. Basic fire recognition and fire hazard identification;
 - 12.37.6.2.2. Identification of Class A, B, C, and D type fires;
 - 12.37.6.2.3. Use of the various types of portable fire extinguishers available; and
 - 12.37.6.2.4. Proper procedure for sounding the fire alarm and notifying the facility building manager/operations manager.

This is documented via completion of General Employee Training and the required reading on the Use of Portable Fire Extinguishers.

- 12.37.6.3. Fire patrol personnel shall have no other duties that would interfere with their ability to monitor the facility/area or immediately sound the alarm should a fire start. Fire Patrols shall ensure that all affected areas of the facility are checked for fires, including locked areas. Fire Patrols shall patrol their assigned area on a Company-designated frequency and maintain a log documenting time of completion of each scheduled route. Documentation of fire patrol activities shall be submitted to the Company.

12.37.7. Flammable Liquid Storage Cabinets

- 12.37.7.1. Seller's flammable liquid storage cabinets require Company authorization for quantity, type and location.
 - 12.37.7.1.1. Not more than 120 gallons of Class I, II and III liquids shall be stored in a single cabinet. Of this total, not more than 60 gallons may be of Class I or II liquids;
- 12.37.7.2. Flammable liquid storage cabinets shall be electrically grounded if flammable liquids are dispensed or transferred from a conductive container located in the cabinet to another conductive container. Bonding shall be provided between the containers;
- 12.37.7.3. When a flammable liquid cabinet is used indoors, the vent opening shall be sealed with a properly fitted bung(s). If a cabinet is vented, it must be vented directly to the outside, by a method approved for the individual cabinet by the Company.
- 12.37.7.4. Original plastic shipping containers are acceptable for storage of flammable and combustible liquids in an approved flammable liquid storage cabinet;
- 12.37.7.5. Aerosol containers with flammable/combustible propellants or contents shall be stored in flammable liquid cabinets, unless required for immediate use; and
- 12.37.7.6. Flammable liquid cabinets shall not be used for storage of liquid, solid, or gaseous oxidizing materials, organic peroxide formulation, flammable compressed gas cylinders, or explosives.

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12.37.8. Portable Heaters

- 12.37.8.1. Temporary heating equipment shall be listed by a NRTL and shall be installed, used, and maintained per the manufacturer's instructions and the following requirements;
 - 12.37.8.1.1. Any deviation from the criteria of Section 12.37.8 shall require prior written approval from the Company.
- 12.37.8.2. Requirements for Portable Electric Heaters
 - 12.37.8.2.1. Portable electric heater's power cord shall be examined for defects prior to use. If a defect or evidence of equipment damage is identified, the heater shall be immediately removed from service;
 - 12.37.8.2.2. Small portable electric heaters shall be directly plugged into an outlet. Heaters shall not be plugged into a power strip or connected via an extension cord. Seller shall shutoff the unit and disconnect the power cord when leaving unoccupied the space being heated;
 - 12.37.8.2.3. Combustible materials, including the building structure, interior finish materials (excluding flooring), and building contents, shall be maintained at least 3 feet away from the face of a small heater; and
 - 12.37.8.2.4. The use of a large portable electric heater (above 110/120 volt) inside a facility shall be permitted only after Company written approval is obtained. Company approval will document any special conditions related to heater use, including heater location, clearance to combustibles, and requirements for personnel attendance;
- 12.37.8.3. Requirements for Portable Heating Devices, Liquid and Gaseous-fired
 - 12.37.8.3.1. Gasoline-fired heaters and solid-fuel fired heaters are prohibited;
 - 12.37.8.3.2. Gaseous-fired heaters are certified by the American Gas Association (AGA), as applicable;
 - 12.37.8.3.3. Fuel for approved liquid and gaseous-fired heaters is stored and handled per the requirements of NFPA 30, Flammable and Combustible Liquids Code, and NFPA 58, Liquefied Petroleum Gas Code;
 - 12.37.8.3.4. Where patio style gaseous-fired heaters are used outdoors, a minimum of 3 feet of clearance is maintained between the front of the radiant panel and combustibles;
 - 12.37.8.3.5. Fuel-fired heaters are located outside buildings with the heat being ducted inside, unless otherwise approved in writing by the Company;
 - 12.37.8.3.6. Fuel-burning space heaters are shut off whenever the space is unattended;
 - 12.37.8.3.7. A space being heated by a fuel-burning heater has sufficient fresh air both to support combustion and to maintain breathing air quality;

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- 12.37.8.3.8. When used inside, fuel-burning space heaters are only permitted in sprinklered buildings, the only exception being noncombustible buildings with noncombustible contents. This type of heater is prohibited in a building where flammable or combustible liquids are used or stored; and
- 12.37.8.3.9. Indoor use of liquid (other than gasoline) or gaseous-fired heaters is permitted for temporary use under the following conditions:
 - 12.37.8.3.9.1. In buildings under construction or undergoing repairs or modifications;
 - 12.37.8.3.9.2. As temporary heat in noncombustible industrial occupancies;
 - 12.37.8.3.9.3. In other buildings for temporary emergency heating purposes, if necessary to prevent damage to the building or contents;
 - 12.37.8.3.9.4. Adequate ventilation is maintained both to ensure support of combustion and to maintain breathing air quality;
 - 12.37.8.3.9.5. A continuous fire watch is provided for the duration of the heater's use; and
 - 12.37.8.3.9.6. Combustible materials, including the building structure and interior finish materials are maintained at least 5 feet away from the heat-producing sides of the heater.
- 12.37.9. Hazardous Materials Transportation
 - 12.37.9.1. Vehicles shall be bonded and grounded during loading and unloading of flammable liquids;
 - 12.37.9.2. Vehicles used for transportation of flammable/combustible materials shall be designated as "No Smoking Areas";
 - 12.37.9.3. Transportation vehicles shall be provided with at least one 20-B:C rated fire extinguisher. Two 10-B:C rated fire extinguishers or one 2A-20-B:C rated fire extinguisher may also be used.
- 12.37.10. Tar Kettles for Roofing Activities
 - 12.37.10.1. The tar kettle setup location requires Company approval, and shall be located no closer than 25 feet from any building or 10 feet from a required means of egress unless approved by the Company otherwise. Remove vegetation or other combustibles from within 10 ft. of the kettle (including beneath the unit) or cover with a fire retardant blanket or tarp material;
 - 12.37.10.2. Compressed gas fuel cylinders for tar kettles shall be limited to a maximum capacity of 100 lb. each. Extra cylinders, other than the cylinder(s) in active use, shall be stored at least 50 feet from buildings. Total fuel supply for roofing operations, including extra cylinders, shall be limited to a one day supply at the Y-12 site. Gas cylinders shall be properly secured at all times;
 - 12.37.10.3. Material laydown areas for work materials such as roofing felt and insulation board shall be located at least 25 feet from buildings except for a 1-day supply;

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- 12.37.10.4. Demolition debris, including mops and cloths, shall be removed from the work area at the end of each day's work and stored at least 25 feet from buildings;
- 12.37.10.5. Roofing operations, including tar kettles, shall be under constant attendance while tar kettle burners are operating. The attendant shall be within 25 ft. of the tar kettle at all times and shall be knowledgeable of the operations, equipment, and its hazards;
- 12.37.10.6. Motorized vehicles shall be detached and relocated from the tar kettle prior to lighting the burners;
- 12.37.10.7. The appropriate number and type of portable fire extinguishers shall be in the work area and near the tar kettle. As a minimum, two approved fire extinguishers rated for 4A:40B:C shall be maintained within 25 ft. of the tar kettle and at least one such extinguisher is provided in the vicinity of the roof work area;
- 12.37.10.8. The vicinity of roofing operations shall be flagged, and exposed combustibles removed or protected;
- 12.37.10.9. Prior to beginning roofing activities, exit routes shall be verified to be accessible and each crew member shall be made aware of the means of egress available for use during an emergency, portable fire extinguishers shall be available and ready for use, and personnel shall be made familiar with means to summon emergency equipment;
- 12.37.10.10. Materials susceptible to spontaneous ignition, such as oily rags and used mop heads, shall be stored in listed noncombustible containers when not in use;
- 12.37.10.11. In special cases, the Company may determine that roofing activities are "hot work." Seller's fire watchers may be required on the underside of combustible roofs, as defined by the Company;
- 12.37.10.12. Tar kettles shall have a working visible temperature gauge that indicates the temperature of the material being heated. Where required for safe operation and in conformance with the vendor/manufacturer's instructions, temperature probes or sensors shall be in place and operational and check valves between the burner and the fuel source shall be in place; and
- 12.37.10.13. Where used, tar pumps and piping shall be properly supported and stabilized to prevent falling.
- 12.37.11. Stock Storage Over 12 Feet High:
 - 12.37.11.1. Prior to any stock storage in excess of 12 feet on pallets stacked in piles, or 12 feet on pallets placed on racks, or 15 feet without pallets, obtain written approval from the Company. Stockpiles of uncontainerized soil and aggregate material with a natural angle of repose are exempt from needing Company approval.

12.38. Reserved.

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12.39. Barricades & Signs

- 12.39.1. The Seller is responsible for erecting and maintaining barricades and barriers in a manner that provides adequate protection and does not impede the work of other subcontractors or the Company.
- 12.39.2. Barricades and barriers erected by the Seller shall have appropriate signs and tags indicating the nature of the hazard and the responsible supervisor, i.e., yellow and black for "CAUTION" or red and black for "DANGER." Barricades left after dark on or in close proximity to roadways shall be properly equipped with flashing amber lights. Barrier devices, including barrier tape, shall not be used as a substitute for a barricade as they do not offer adequate fall protection. Barrier devices shall be used only in those applications where temporary identification of a hazard is needed; but not as a primary.
- 12.39.3. Ensure that employees understand and comply with barricade and barrier procedures (e.g. prohibited entry into red barrier taped areas).
- 12.39.4. Where hazards are expected to exist for more than 24 hours (e.g., excavations), ensure that a physical barricade is erected using wooden or metal guardrails. A tag or sign shall be attached or posted to indicate the hazard, the supervisor responsible for the area, and other pertinent warnings.
- 12.39.5. Ensure that barricades are complete (i.e., the work area is entirely isolated and identified). The barricaded area will be of sufficient size to afford appropriate protection.
- 12.39.6. As appropriate for the scope of work, ensure that required safety signs are posted (e.g., prohibition signs, warning signs, mandatory action signs, fire safety signs, etc).
- 12.39.7. Ensure that all emergency exits, passageways, fire doors, first aid stations, eye wash stations and emergency evacuation points in the assigned work areas are highlighted with safety condition signs. Warning signs shall be erected and displayed for fire hazards, electrical equipment, openings, overhead working, noisy areas, utilities, overhead power lines, and other hazards.

12.40. Floor and Wall Openings

- 12.40.1. The Seller shall review the fall hazards involved in its scope of work and construct standard handrail systems where required. Handrails shall be constructed with the top rail 42 inches from the floor or platform level and shall have a mid-rail and toe-board. Toe-boards shall extend 4 inches above the floor or platform level.
- 12.40.2. Install vertical support posts for handrails at intervals of not more than 8 feet.
- 12.40.3. Barricade all floor openings, or install properly labeled and substantial covers (3/4 inch, exterior grade plywood able to withstand at least twice the anticipated load). All floor-opening covers shall be stenciled or painted with this statement: "OPEN HOLE - DANGER, DO NOT REMOVE".
- 12.40.4. Ensure that anyone working inside of a barricaded area around a floor opening or wall opening is required to wear and use a safety harness.
- 12.40.5. If an opening cover needs to be removed for a short period of time, ensure that an employee is assigned to guard the area involved to keep personnel away from it. If a cover has to be removed for an extended period of time, a substantial guardrail must be erected around the opening.

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12.41. Portable Ladders – Control and Inspection

- 12.41.1. The Seller shall use ladders constructed of wood or fiberglass (not metal) with non-slip feet and only wooden ladders treated with preservative.
- 12.41.2. Erect ladders so that access/egress areas are unobstructed.
- 12.41.3. The Seller shall have an acceptable Ladder Inspection Procedure for the documented quarterly inspection of ladders. To achieve this, an identification method (i.e., company name and number) and means to indicate inspection status (e.g. tape) shall be developed.
- 12.41.4. Use ladders for egress and/or to conduct low level work of short duration and not use ladders in lieu of scaffolds as a primary means of conducting work of longer duration.
- 12.41.5. Ensure that two or more people will not work from the same ladder unless it is specifically designed for two people.
- 12.41.6. Ensure that side rails of all ladders that are in use extend 36 inches above the landing (when this is not practical, grab rails shall be installed). Ensure that ladders in use are tied, blocked or otherwise secured to prevent displacement.
- 12.41.7. Ensure that straight ladders are no longer than 20 feet, extension ladders are no longer than 36 feet, and stepladders and platform ladders are no longer than 12 feet, as determined by the front rail.

12.42. Suspended Personnel Platforms

- 12.42.1. The Seller shall have an acceptable Lift Procedure prior to using any suspended personnel platform. The procedure shall include, but not be limited to, employee training, pre-lift meetings, trial lifts, and platform inspection.
- 12.42.2. Perform a visual inspection, checking for the condition of the basket and lifting bridle (signs of rust, corrosion, damage, and cable condition) to determine equipment is in an acceptable and safe condition prior to use.
- 12.42.3. Personnel platforms (baskets) provided by the Seller shall be designed by a qualified engineer and manufactured by competent personnel. They shall have permanent markings indicating maximum weight.
- 12.42.4. If the Company approves the use of crane suspended personnel platforms, the Seller shall thoroughly inspect the crane/derrick and ensure the following: an operational anti two block device and locking devices on the hook; free fall capacity, if present, is locked out or disabled; the area under the lift is isolated by barrier tape and signs; and there is a positive means of communication between the crane operator and employees in the suspended personnel platform. Employees in the platform shall wear full body harness attached to a designated anchor point.

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12.43. Compressed Gas Cylinders

- 12.43.1. The Seller shall have an acceptable Gas Cylinder Use and Storage Procedure that allows for proper use and storage of compressed gas cylinders. The procedure shall include segregation by type, proper signage, protective isolation of fuel gasses from oxygen, provisions to keep cylinder caps in place when provided by the supplier, positive upright securing of bottles, and maintenance of safe distances from ignition sources.
- 12.43.2. Provide cradles and/or cages for lifting compressed gas cylinders and ensure that cylinders being transported are secured and in the upright position.
- 12.43.3. The Seller shall ensure that:
 - 12.43.3.1. Each individual cylinder turned off by a key wrench is provided with a key wrench whenever in use;
 - 12.43.3.2. Damaged cylinders are removed from service, tagged “DANGER – DO NOT USE” and reported to the appropriate supervisor and the Company ES&H representative;
 - 12.43.3.3. Cylinder-to-cylinder connections are never made for the purpose of gas transfer; and,
 - 12.43.3.4. Cylinder protective caps are never used for lifting or handling cylinders.

12.44. Night Work Requirements

- 12.44.1. The Seller shall ensure that the lighting provided is adequate for the work and personnel are not working in the shadows. Perform regular inspection and maintenance of lighting equipment and ensure that all lighting equipment installed has been checked and certified in accordance with code requirements. Ensure that cables and other material are located in a way that prevents trip hazards.
- 12.44.2. Ensure that bulbs in light fixtures are protected from breakage (as designed by the manufacturer or as required by regulating agencies). Lighting fixtures shall be positioned to prevent employees from coming into contact with the fixtures during work operations. Lighting supply cords and cables shall be installed and maintained in a manner consistent with good electrical wiring practices.
- 12.44.3. Ensure that all points of exit and pathways are clearly illuminated and marked. Ladder access and egress areas shall be clearly illuminated.
- 12.44.4. Ensure that area lighting is located to avoid glare and spaced to provide adequate illumination for the areas covered.
- 12.44.5. Ensure that temporary lighting strings consist of non-conductive lamp sockets and connections are permanently molded to the conductor insulation. Temporary installations must meet all the requirements of the National Electrical Code. Bulbs attached to extension cords and lighting strings shall be protected by lamp guards.

12.45. Fork Lifts & Power Industrial Trucks

- 12.45.1. The Seller shall ensure that only trained and authorized operators are permitted to operate powered industrial trucks.
- 12.45.2. Ensure that the use of powered industrial trucks complies with all manufacturer requirements and recommendations for safe operation, loading, traveling, and maintenance of powered industrial trucks.

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- 12.45.3. Ensure that adequate ventilation is provided when operating in closed areas where internal combustion-powered vehicles are used. If operating in areas where fire and/or ordnance hazards exist, the exhaust of the truck shall be equipped with a spark arrestor. When operating in enclosed areas, internal combustion engines will be shut down when not in use. Only approved industrial trucks shall be used in hazardous locations.
- 12.45.4. Ensure that operators do not use cell phones (or any other type of mobile phone) while operating a powered industrial truck.
- 12.46. Housekeeping
 - 12.46.1. Seller facilities shall be maintained in a clean and sanitary condition at all times.
 - 12.46.2. Reserved.
 - 12.46.3. Reserved.
 - 12.46.4. Ensure that any instances of poor housekeeping resulting in the creation of a tripping, slipping, fire hazard or loss are corrected immediately.
 - 12.46.5. Ensure that assigned office areas are clean and regularly maintained. Laboratories and workshops shall be maintained clear of debris, waste and other rubbish, which shall be disposed of in accordance with manufacturer guidelines and the Project's waste management plan.
- 12.47. Air Surveillance Program
 - 12.47.1. The Seller shall identify work activities which could lead to potentially hazardous atmospheric conditions caused or created by Seller or lower-tier supplier or subcontractor activities. Examples include the operation of fueled equipment inside an enclosed area, welding, the use of hazardous or toxic materials, etc. Monitor and institute mitigating steps to prevent exposure to such conditions.
 - 12.47.2. Provide equipment adequate for aerial sampling and monitoring and develop an Air Surveillance Procedure covering sampling, monitoring, and identification of source contaminants. Such equipment shall be operated only by qualified personnel and it shall be calibrated pre and post use per manufacturer protocol. Surveillance logs, records and results shall be maintained and made available to the Company.
- 12.48. Reserved.
- 12.49. Back Injury Prevention Program
 - 12.49.1. The Seller shall establish a Back Injury Prevention Program approved to the Company. A back injury prevention program shall consist of morning stretching, continuing education, possibly the use of back support belts, etc. and shall apply to all employees.
 - 12.49.2. The back injury prevention program shall be an integral part of the Seller's New Employee Orientation. Back injury prevention awareness training shall be conducted at least once per month.
- 12.50. Blood borne Pathogens
 - 12.50.1. The Seller shall submit an adequate Exposure Control Plan addressing an acceptable Blood borne Pathogens Program.
 - 12.50.2. Seller shall properly train employees who are exposed to blood borne pathogens regarding their responsibilities, required control measures, and personal safety. Proper personal protective equipment shall be used when exposure hazards exist. Each employee whose job duties puts them at risk of exposure (e.g., medic, nurse, first aid person, etc.) shall be offered vaccinations by the Seller and documentation of the vaccination or declination shall be maintained and made available to the Company.

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- 12.50.3. Provide all employees with a general overview on the hazards associated with blood borne pathogens, possible means of exposure, and proper control methods.
- 12.50.4. Seller shall provide for proper disposal of hazardous medical wastes and post a sign in the treatment area warning of biohazards. A "sharps" container shall be maintained in the first aid area for the secure disposal of used needles and similar medical waste. Proper sterilization methods and materials shall be used.

13.0 SECURITY

13.1. General

- 13.1.1. Individuals requiring access to Y-12 shall provide a valid government issued photo identification and an original proof of United States citizenship. Valid forms of proof of United States citizenship are:
 - 13.1.1.1. Birth certificate (certified copy issued by city/county/state government with raised and/or colored official seal) – hospital records are not acceptable;
 - 13.1.1.2. Certificate of Naturalization [Immigration and Naturalization Services (INS) Form N-550 or N-570];
 - 13.1.1.3. Certificate of United States Citizenship issued by Immigration and Naturalization Services (INS Form N-560 or N-561);
 - 13.1.1.4. Consular report of birth (of U.S. Citizen) abroad or certification of birth (FS-545 or DS-1350);
 - 13.1.1.5. United States passport which must be undamaged and current.
- NOTE: Visitor access does not require proof of citizenship. Access to Y-12 will be denied or delayed for others requesting photo badge until proof of citizenship is provided. Access for foreign nationals shall be approved through the Y-12 Foreign National Visit and Assignment Process.
- 13.1.2. If delivery, service, or vendor personnel do not possess requisite proof of citizenship, the Company may authorize restricted access with an escort. Seller shall provide an escort to accompany them while at Y-12. Such escorts shall be appropriately cleared, photo badged, complete a brief Overview of Responsibilities, and be dedicated solely to escort duties.
- 13.1.3. All personnel with access to subcontract drawings and specifications shall be U.S. citizens unless the Company grants specific approval for foreign nationals in writing.
- 13.1.4. All packages, briefcases, bags, etc. brought into the Y-12 Complex shall be marked with owners' name, organization/company and phone number. They must not be left unattended. Prohibited, controlled, restricted and unauthorized items are identified in the following Table.

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Table of Prohibited, Controlled, Restricted, and Unauthorized Items
(Sheet 1 of 3)

Prohibited and Controlled Articles	Property Protected Areas	Limited Areas Exclusion Area Protected Area	Material Access Area
1. Firearms	Personally owned items are not allowed.	Personally owned items are not allowed.	Personally owned items are not allowed.
2. Dangerous weapons (any instrument or material likely to produce substantial injury to persons or damage to persons or property). Example: pellet guns, switchblade knives, any knife with blade exceeding 3 inches, archery equipment, pepper spray, etc.	Personally owned items are not allowed.	Personally owned items are not allowed.	Personally owned items are not allowed.
3. Explosives	Personally owned items are not allowed.	Personally owned items are not allowed.	Personally owned items are not allowed.
4. Any item prohibited by law	Not allowed.	Not allowed.	Not allowed.
5. Illegal drugs and any associated paraphernalia	Not allowed.	Not allowed.	Not allowed.
6. Ammunition	Personally owned items are not allowed.	Personally owned items are not allowed.	Personally owned items are not allowed.
7. Incendiary devices	A limited number of items as may be found in an emergency road kit in a personal vehicle (road flares).	Personally owned items are not allowed.	Personally owned items are not allowed.
8. Knives	Personally owned knives must have a blade that measures no more than 3 inches, and is not considered a switch blade type item. Tools required for the performance of job duties should be provided by the company and should be marked as being government property.	Personally owned knives must have a blade that measures no more than 3 inches, and is not considered a switch blade type item. Tools required for the performance of job duties should be provided by the company and should be marked as being government property.	Obey all postings regarding prohibited or controlled articles.
9. Cameras	Personally owned cameras may be stored in personal vehicles but are not authorized for use.	Personal cameras not authorized for use.	Personal cameras not authorized for use.

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**Table of Prohibited, Controlled, Restricted, and Unauthorized Items
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Prohibited and Controlled Articles	Property Protected Areas	Limited Areas Exclusion Area Protected Area	Material Access Area
<p>10. Personal IT devices B&W issued IT devices Other Business issued IT devices Government issued IT devices (Droid, iPhone, iPods, BlackBerry, Evo, Pre Plus, Rogue, e-readers, iPad, netbooks, and laptop computers. These examples are not meant to be all inclusive.)</p>	<p>All IT devices regardless of ownership are authorized for use to make and receive calls or text. Hands free devices are required when driving on Bear Creek Road, parking areas, or inside the plant. Bluetooth capabilities, audio and video recording, or camera capabilities are not authorized for use. The use of personal IT devices for playing audio files must be approved by safety personnel in active construction locations.</p>	<p>B&W issued IT devices are authorized for use. Bluetooth capabilities, audio and video recording, or camera capabilities are not authorized for use. Obey posted instructions regarding removal of battery.</p>	<p>B&W issued IT devices are authorized for use by designated personnel in emergency events when needed to relay emergency information. Bluetooth capabilities, audio and video recording, or camera capabilities are not authorized for use.</p>
<p>11. Two-way radios Two-way pagers</p>	<p>Privately owned two-way radios and two-way pagers are not allowed without approval on a case by case basis. Government issued two-way radios are authorized.</p>	<p>Government issued two-way radios are authorized.</p>	<p>Government issued two-way radios are authorized.</p>
<p>12. Personal computers and associated media (thumb drives, CD's, etc.)</p>	<p>Personal computers are authorized in areas that are not otherwise posted. NO personal computer or personal media device may be connected in any way to a government IT resource. Music CD's (commercial or personally compiled) are allowed in personal playing devices only.</p>	<p>Not allowed.</p>	<p>Not allowed.</p>
<p>13. Recorders</p>	<p>Any recording device that is required in the performance of work must be government issued and have the proper paperwork.</p>	<p>Any recording device that is required in the performance of work must be government issued and have the proper paperwork.</p>	<p>Any recording device that is required in the performance of work must be government issued and have the proper paperwork.</p>
<p>14. Binoculars</p>	<p>No personal binoculars are allowed. Binoculars required in the performance of work will require prior authorization from security for a defined event.</p>	<p>No personal binoculars are allowed. Binoculars required in the performance of work will require prior authorization from security for a defined event.</p>	<p>No personal binoculars are allowed. Binoculars required in the performance of work will require prior authorization from security for a defined event.</p>
<p>15. Alcohol</p>	<p>Not allowed.</p>	<p>Not allowed.</p>	<p>Not allowed.</p>

SUPPLEMENTAL CONDITIONS
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Table of Prohibited, Controlled, Restricted, and Unauthorized Items
(Sheet 3 of 3)

Prohibited and Controlled Articles	Property Protected Areas	Limited Areas Exclusion Area Protected Area	Material Access Area
16. Chemical irritants	Allowed in amounts less than 2 ounces and must remain in personal vehicle.	Not allowed.	Not allowed.
17. Animals	Personally owned animals are not allowed unless they are certified service animals.	Personally owned animals are not allowed unless they are certified service animals.	Personally owned animals are not allowed unless they are certified service animals.

- 13.1.5. Use of Business Class Radios (Not issued by Company) requires completion of a *Telecommunication Proposal* (UCN-16020A) and Company and DOE approval before use at Y-12.
 - 13.1.5.1. Seller shall assign a qualified individual to monitor the business class radios during work activity and notify the PSS in case of an emergency.
 - 13.1.5.2. Seller shall submit a valid Federal Communication Commission license to operate in this geographical area to the Company for information.
- 13.1.6. Non-DOE issued and unapproved Seller cell phones within the boundaries of Y-12 shall be turned-off and left in the private vehicle parked in General Plant areas or placed in Company-designated temporary storage.
 - 13.1.6.1. Cell phones with camera or web enabled recording capabilities are prohibited.
- 13.1.7. Cell phones are only allowed in the General Plant and Property Protection Area and require completion of a *Telecommunications Proposal* and Company and DOE approval before use at Y-12.
 - 13.1.7.1. Cordless phones are prohibited.
 - 13.1.7.2. Use of Seller’s cell phones are permitted without prior approval only on Bear Creek Road and designated public parking areas outside of the Y-12 security fence.
 - 13.1.7.3. Violators of the cell phone policies are subject to disciplinary action, which may include denied access to the site and loss of badge.
- 13.1.8. Any device with infrared or wireless capability requires completing of *Telecommunication Proposal* and Company and DOE approval for use before brought to Y-12. Devices such as surveying equipment and ground penetration devices which utilize wireless capabilities require an approved *Telecommunications Proposal* prior to being brought on site at Y-12.
- 13.1.9. Request Company approval two (2) workdays prior to needing Portal access during off-shift hours.
- 13.1.10. All Seller vehicles and personnel are subject to a search when entering or exiting Y-12. Cargo configuration for trailers entering Y-12 shall conform to Y-12 Security vehicle-loading requirements (refer to the Company Procurement Public Web Site).

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- 13.1.11. Seller shall not bring Seller owned computing devices (laptops, desktops, PDA's, printers, etc) into Y-12 without prior written approval from the Company. Computing equipment must be provided by Y-12 with network connections to Y-12 provided by Y-12 at Seller expense. Seller business operations on Y-12 computers and networks are limited to the minimum required to support the subcontract. Seller communications and activities on computers will be monitored.
 - 13.1.12. Seller computing equipment specific to an individual task (such as equipment calibration, system certification, etc.) requires Company approval prior to being brought on site. Seller's equipment is subject to review prior to entering the site and prior to leaving the site. Equipment must remain in the possession of a B&W Y-12 Q-cleared employee if the equipment enters a Limited Security Area, Exclusion Area, Protected Area, or Material Access Area. Removal of equipment from the site in any case requires a separate approval for re-admittance of the equipment to the site.
- 13.2. Site Access
- 13.2.1. General Plan Area Access
 - 13.2.1.1. General Plant Area – Areas and buildings located outside the Property Protected Area but inside the Y-12 security portals manned by Security Police Officers. The General Plant Area is between Portals 20 (West) and 23 (East) and between the north and south 229 Boundary lines
 - 13.2.1.1.1. Workers accessing the General Plant Area do not require a security clearance.
 - 13.2.1.1.2. Portal 20 maintains a restricted time schedule; therefore, access and egress from the west end of Bear Creek Road requires coordination through the STR for use outside normal construction working hours.
 - 13.2.1.2. Company STR office buildings are off Bear Creek Road on Old Bear Creek Road.
 - 13.2.1.3. For access, the Seller shall complete and submit a Homeland Security Presidential Directive (HSPD-12) Badge Request form to the STR to obtain a photo badge for Seller's employees and lower-tier subcontractors.
 - 13.2.1.3.1. Request for visitor badge, Bear Creek Road and vehicle passes shall be submitted to the STR using the Subcontractor Request for Y-12 National Security Complex Temporary Access and Vehicle Pass form.
 - 13.2.1.3.2. Seller shall allow two (2) workdays notice for badge request processing.
 - 13.2.1.3.3. Seller's photo badges require validation quarterly. The Seller is to provide the STR a list of names with badge numbers for validation. Failure to submit may result in restricted access.
 - 13.2.1.4. Pick up for photo badges and temporary passes or visitor badges are at New Hope Visitors Center on Scarboro Road in Oak Ridge, Monday – Thursday, 6:30AM – 4:00PM. Photo identification (e.g., driver license) and original proof of US Citizenship must be presented to pick-up badge.
 - 13.2.1.5. General Employee Training (GET) and a Security Briefing provided by the Company are required for all Seller personnel requesting a photo badge. No specific training is required for a temporary Bear Creek Road pass.

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- 13.2.1.6. Seller personnel shall present their badge or temporary pass to Security when entering Y-12. Badges shall be prominently displayed above the waist on outermost clothing at all times while at Y-12. Badges shall be removed from view upon exiting Y-12 and shall be maintained in a secure place.
- 13.2.1.7. All photo badges issued to the Seller are government property. The Seller shall notify the Company and return photo badges to the STR within one (1) workday of expiration of the Subcontract, termination of the employee, or when access to Y-12 is no longer needed.
 - 13.2.1.7.1. Persons holding L or Q clearances are required to attend a 30-minute debriefing. Debriefings shall be scheduled through the STR three (3) workdays in advance of requirement.
 - 13.2.1.7.2. Persons holding L or Q clearances are subject to random drug tests within 1.5 hours of notification of the individual by the Company. Individual must report to Y-12 Medical within 1.5 hours of notification. Failure to report for testing within the required time will be treated as a positive result.
- 13.2.1.8. Seller shall brief their personnel, vendors, suppliers, and delivery transporters on the presence of vehicle height restrictors at both entrances to Y-12 on Bear Creek Road. Seller is responsible for damages resulting from their personnel or their lower-tier subcontractor personnel accidentally striking the vehicle height restrictors.
- 13.2.2. Limited Security Area (LSA) Access
 - 13.2.2.1. Limited Security Area (LSA) – Security areas in which an individual’s mere presence may result in access to classified matter. Personnel clearance requirements are posted at the entrance to the LSA.
 - 13.2.2.2. Seller personnel requiring entry to the LSA shall submit their personal information (name, badge number, and date of birth) to the STR a minimum of two (2) workdays prior to requirement.
 - 13.2.2.2.1. Seller’s personnel not meeting the clearance requirements of the LSA require Q-cleared escort and area posting that identifies uncleared personnel are in the area.
 - 13.2.2.3. All personal items shall be placed in a clear plastic bag, which allows a thorough inspection of the items. Lunch bags and enclosed containers will require opening for inspection.
 - 13.2.2.4. Uncleared drivers will require a 1:1 Q-cleared escort for deliveries. Only the uncleared driver with escort can enter and exit with the vehicle. Seller shall provide a vehicle for the escort if escort cannot ride in the delivery vehicle.
 - 13.2.2.5. Lock all vehicles, equipment, and toolboxes when unattended and at the end of each workday.
 - 13.2.2.6. Do not leave keys in the ignition of unattended vehicles and equipment. Unattended keys may be confiscated by Security resulting in work delays. Such delays are at the expense of the Seller.
 - 13.2.2.7. Coordinate access to all LSAs with the Company STR.

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- 13.2.3. Exclusion Area (EA) Access
 - 13.2.3.1. Exclusion Area (EA) – Security areas designated for the protection of classified matter and special nuclear materials.
 - 13.2.3.2. Seller’s Q-cleared personnel requiring entry to the EA shall submit their personal information (name, badge number, and date of birth) to the STR a minimum of four (4) workdays prior to need to enter. An Escort Package is required for personnel without a Q-clearance.
 - 13.2.3.3. All personal items shall be placed in a clear plastic bag, which allows a thorough inspection of the items. Lunch bags and enclosed containers will require opening for inspection.
 - 13.2.3.4. Entry prior to 7:00 a.m. by escorted uncleared workers is not authorized unless the Company grants prior approval.
 - 13.2.3.5. All vehicles and their contents are subject to a comprehensive search by Security.
 - 13.2.3.6. Allow up to one hour for processing of deliveries into the EA.
 - 13.2.3.7. Seller delivery trucks and other service trucks shall enter the EA through Portal 13 and have a valid vehicle pass. Supplies must be loaded in a manner to allow inspection of all contents. Loading shall allow a clear aisle for a walking inspection around the materials. Deliveries not loaded to allow inspection shall be off-loaded for inspection at the Seller’s expense.
 - 13.2.3.8. Uncleared drivers will require a 1:1 Q-cleared escort for deliveries. Only the uncleared driver with escort can enter and exit with the vehicle. Seller shall provide a vehicle for the escort if escort cannot ride in the delivery vehicle.
 - 13.2.3.9. Lock all vehicles, equipment, and toolboxes when unattended and at the end of each workday.
 - 13.2.3.10. Do not leave keys in the ignition of unattended vehicles and equipment. Unattended keys may be confiscated by Security resulting in work delays. Such delays are at the expense of the Seller.
 - 13.2.3.11. Uncleared heavy equipment operators shall be under continual surveillance of a Q-cleared escort. Heavy equipment shall not be staged or used within 50 feet of the security fence without prior Company approval. Special procedures shall be followed when using boom type equipment within 50 feet of the security fence.
 - 13.2.3.12. While in the EA, breaks and lunches shall be held at the work area. Seller shall provide a suitable area for breaks and lunch and portable restroom facilities.
- 13.2.4. Property Protection Area (PPA) Access
 - 13.2.4.1. Property Protection Area (PPA) – Area established to protect government property against damage, destruction, or theft.
 - 13.2.4.2. Access to the PPA requires a photo badge or a temporary visitor badge.
 - 13.2.4.3. For access, the Seller shall complete and submit a Subcontractor Request for Y-12 National Security Complex Access and Badge form to STR for badges and/or passes. Seller shall allow two (2) workdays notice for badge request processing.

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- 13.2.4.4. Vehicle access to the PPA requires a vehicle pass. The Seller shall complete and submit a Subcontractor Request for Y-12 National Security Complex Vehicle Pass form to STR a minimum of two (2) workdays prior to the requirement.
- 13.2.4.5. Other Vehicle Requirements:
 - 13.2.4.5.1. Seller's vehicles shall prominently display two Seller identification signs (one on each front door).
 - 13.2.4.5.2. Seller's vehicles and equipment are subject to a security search when entering and exiting Y-12. Containers, boxes, and compartments shall be fully accessible. Expect 20 minutes on average for inspection.
 - 13.2.4.5.3. Vehicle operators and passengers shall comply with all State of Tennessee Motor Vehicle Laws and Regulations including, but not limited to, the use of seat belts.
 - 13.2.4.5.4. The Company will designate Seller vehicle parking. Seller shall furnish on-site transportation of their personnel within the PPA.
- 13.2.4.6. A K-9 security checkpoint is located at the east entrance lot north of Portal 13. All deliveries are required to enter the K-9 inspection area. Arrange cargo so that K-9s and Security personnel can access the loads for inspection. Expect 30 minutes on average for inspection. Large loads may require unloading and reloading for inspection. After inspection, delivery vehicles will enter Y-12 along routes designated by the Company. Deliveries through the West End on Bear Creek Road require Company authorization and shall be scheduled through the STR a minimum of 1 workday in advance.
- 13.2.4.7. Maintain a 20-foot wide clear zone along security fences. If work is to be performed within the 20-foot clear zone, provide two (2) workdays advance notice and receive approval from the Company.
- 13.2.5. Protected Area (PA) Access
 - 13.2.5.1. Protected Area (PA) – Area within the PPA that protects special material requiring Q- clearance for entry or Q-cleared escorts for uncleared workers.
 - 13.2.5.2. Seller's Q-cleared personnel requiring entry to the PA shall submit their personal information (name, badge number, and date of birth) to the STR a minimum of two (2) workdays prior to requirement. An Escort Agreement is required for personnel without a Q-clearance. All personnel entering the PA must have set up a PIN and biometrics at the Visitor's Center prior to entry.
 - 13.2.5.3. Allow 30 minutes on average per person or escorted group (up to five uncleared) for each entry into the PA and 20 minutes on average per person or escorted group for each exit from the PA. Each person will receive a detailed search when entering and exiting the PA. Seller shall utilize Portal 33 for PA entry and exit during normal work hours, unless Company STR authorizes another portal.

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- 13.2.5.4. Only hand carried items that will clear the metal detector or that can be visually inspected are allowed. Seller shall require that personnel minimize personal items carried into the PA. Items such as coins, keys, billfolds, and foil wrappers can cause delays at the entry portal. All personal items shall be placed in a clear plastic bag, which allows a thorough inspection of the items. Lunch bags and enclosed containers will require opening for inspection. Items that cannot clear the metal detector and/or sealed (not allowing internal inspection) are not authorized through the entrance Portal. Personnel will be allowed up to three attempts to clear the portal before being sent to the back of the line. Company is not responsible for delays caused by Seller's personnel unable to clear the metal detector.
- 13.2.5.5. Entry prior to 7:00 a.m. by escorted uncleared workers is not authorized unless the Company grants prior approval.
- 13.2.5.6. To minimize the number of vehicle entries the Seller shall arrange transportation (shuttle van) to remain within the PA as required for its workers. Deliveries shall be combined at the Seller lay-down yard or other suitable area outside the PA to minimize entries. Emergency entries must be arranged through the STR. The Company does not guarantee Seller entries in excess of one entry per workday.
- 13.2.5.7. All vehicles and their contents are subject to a comprehensive search by Security.
- 13.2.5.8. Allow up to one hour for processing of deliveries into the PA.
- 13.2.5.9. Seller delivery trucks and other service trucks shall enter the PA through Portal 33. Supplies shall be loaded in a manner to allow inspection of all contents. Loading shall allow a clear aisle for a walking inspection around the materials. Deliveries not loaded to allow inspection shall be off-loaded for inspection at the Seller's expense.
- 13.2.5.10. Uncleared drivers will require a 1:1 Q-cleared escort for deliveries. Only the uncleared driver with escort can enter and exit with the vehicle. Seller shall provide a vehicle for the escort if escort cannot ride in the delivery vehicle.
- 13.2.5.11. For dump trucks hauling debris out of the PA, special requirements may be necessary due to the presence of radiation monitors. Coordinate the hauling of debris through the STR two (2) workdays prior to need. Delivery of concrete and gravel into PA shall be coordinated through the STR a minimum of two (2) workdays prior to required date.
- 13.2.5.12. Water trucks shall enter empty and be filled at the designated fill point within the PA. Provide a (3) three workday notice prior to required entry.
- 13.2.5.13. Bed-mounted fuel tanks are prohibited in the PA.
- 13.2.5.14. Seller shall allow for eight crew hours lost time per month for security lock downs and other emergency drills and notifications (A crew hour is defined as the total of all hours from workers and equipment within the PA). During a lock down work inside a building or outside within a controlled work area may continue unless directed to stop by Security. Work outside, other than a controlled work area, shall cease and await instruction from Security. Workers in transit should stop and obey all instructions from Security.

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- 13.2.5.15. Lock all vehicles, equipment, and toolboxes when unattended and at the end of each workday.
- 13.2.5.16. Do not leave keys in the ignition of unattended vehicles and equipment. Unattended keys may be confiscated by Security resulting in work delays. Such delays are at the expense of the Seller.
- 13.2.5.17. Uncleared heavy equipment operators shall be under continual surveillance of a Q-cleared escort. Heavy equipment shall not be staged or used within 50 feet of the security fence without prior Company approval. Special Company process shall be followed when using boom type equipment within 50 feet of the security fence.
- 13.2.5.18. Minimize deliveries into and out of the PA. Special arrangements can be made to expedite entry of time sensitive or other special materials if the Seller makes the required arrangement through the STR a minimum of two (2) workdays prior to need.
- 13.2.5.19. While in the PA, breaks and lunches shall be held at the work area. Seller shall provide a suitable area for breaks and lunch and portable restroom facilities.
- 13.2.5.20. Any Seller-provided trailer in the PA shall be setup and ready for use (including power) four (4) workdays prior to use.
- 13.2.5.21. Maintain a 50-foot wide clear zone along security fences. If work is to be performed within the 50-foot clear zone, provide three (3) workdays advance notice and receive approval from the Company.

13.3. Escort Requirements

- 13.3.1. This section includes specific requirements for Seller-furnished escorts to accompany uncleared construction workers in the PA, EA, and Limited Security Areas
- 13.3.2. All escorts shall hold a current DOE Q-clearance and be badged at Y-12. Clearances held at other DOE sites may be extended to Y-12.
- 13.3.3. Copies of the handbook entitled *Handbook for Escorting Uncleared Construction Workers* will be provided to the Seller upon request to the STR. Each escort shall be provided a copy of the "Handbook" and return a receipt acknowledgement to the STR that the escort has read and understands the requirements addressed in the "Handbook." The "Handbook" is stamped "Official Use Only" and shall be kept in a secure location when not in use.
- 13.3.4. Perform periodic checks of escort program and solicit feedback from the Company to incorporate lessons learned. Incorporate escort operations into Work Plan, AHA, and project-specific ES&H Plan, as required, to integrate the escort as a part of the overall work.
- 13.3.5. Provide sufficient escorts for the performance of the work. Seller-provided escorts shall have no other job responsibilities while performing escort work. Unless otherwise specified in the Escort Package (EP) or Security Plan, provide one Q-cleared escort for a maximum of five uncleared workers. The escort shall maintain eyesight on the uncleared workers. Splitting the crew (five) of uncleared workers into visually separated areas would require additional escorts or specific Company approval. Examples of crew escort requirements are:
 - 13.3.5.1. If any uncleared worker in the group exits the PA, then all shall exit unless an additional escort accompanies the uncleared worker to the exit portal.

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- 13.3.5.2. An uncleared superintendent, ES&H Representative, or other supervision moving around the work area shall be in visible proximity to their assigned escort. If working and moving about individually, each requires an assigned escort.
- 13.3.5.3. An uncleared photo badged truck driver hauling materials into and out of the PA shall be escorted from the PA entrance Portal to the work area and back to the exit Portal.
- 13.3.5.4. One assigned escort can escort an uncleared heavy equipment operator, an uncleared spotter, and an uncleared laborer providing dust suppression as long as they are all in visible proximity to their escort.
- 13.3.5.5. An uncleared worker who leaves his crew to retrieve tools or equipment requires escorting by another assigned escort if he leaves visual proximity of the crew escort.
- 13.3.5.6. Crews with both Q-cleared and uncleared workers can be used but the uncleared workers shall be escorted by an assigned escort who has no other duties.
- 13.3.6. In addition to the training requirements for Seller personnel, Seller escorts shall complete Y-12 Plant Escort Training.
- 13.3.7. Seller escorts shall comply with Subcontract requirements including, but not limited to, ES&H, RadCon, and respiratory protection. Escorts shall have completed all training as required by the AHA, work permits, and other instructions.
- 13.3.8. Seller escorts shall read, understand, and comply with the *Handbook for Escorting Uncleared Construction Workers*. Each escort shall maintain a copy of the Handbook and Escort Agreement on their person at all times while performing escort duties.
- 13.3.9. Immediately after award, Seller shall participate in planning activities and provide a proposed *Escort Package* (EP) to the STR for review. Such activities could include a walk-down of the work area access route, meeting(s) with Company Physical Security Officials (PSO) and Facility Operation Manager (FOM) (if applicable), initiation of a draft EP and a work-specific Security Plan (if applicable) for review by the STR, FOM and PSO. Allow twelve (12) workdays for approval of the EP upon submission to the STR.
- 13.3.10. Seller shall ensure the accuracy and the completeness of information on the EP. Information about the work area, route of ingress and egress, and all other information must be complete in specific detail. The STR will assist the Seller in the completion of the EA, but the Seller retains responsibility for the information provided. Q-cleared workers shall only be listed on the EP if they are serving as an escort. Delays resulting from the Seller providing inaccurate information are the responsibility of the Seller.
- 13.3.11. Review accuracy of the EPs on a daily basis. Immediately submit to the STR any required changes to a standing escort agreement, including all personnel changes. Allow up to eight (8) workdays for approval of a revised EP.
- 13.3.12. In the event information in the *Handbook for Escorting Uncleared Construction Workers* conflicts with information in the EP and/or Security Plan, the information in the EP or Security Plan takes precedence.
- 13.3.13. Unless otherwise authorized in the EP or Security Plan, Seller escort(s) shall maintain visible observation of their uncleared personnel at all times.

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- 13.3.14. Seller shall develop a Security Plan, when required, with detailed directions for escort operations. Security Plan shall be approved by the Company and attached to the EP.
 - 13.3.15. Escort Operations
 - 13.3.15.1. Upon receipt of an approved EP, Seller shall perform the following:
 - 13.3.15.1.1. Verify all information is accurate.
 - 13.3.15.1.2. Provide each escort a copy of the EP and a handbook (*Handbook for Escorting Uncleared Construction Workers*). The EP must include the Escort Agreement Organization (EAO) approval cover sheet (e-mail).
 - 13.3.15.1.3. Hold a pre-job brief to include a walk down of the ingress and egress route.
 - 13.3.15.1.4. Ensure each escort understands their responsibilities.
 - 13.3.15.1.5. Seller escorts and uncleared workers shall be identified as such by utilizing a visible method as detailed in the handbook, EP, or as otherwise approved by the Company.
 - 13.3.15.1.6. Request through the STR a Company “green card” for each uncleared worker listed on the EP. Green cards are required unless waived by the Company.
 - 13.3.15.2. For LSA, EA, and PA access comply with the following:
 - 13.3.15.2.1. Escort shall brief uncleared workers on prohibited items and ensure they do not take such items to the entry portal. Cell Phones, two-way pagers, Seller radios, recording devices, and Personal Data Assistants (PDA) are prohibited in the PA. Recordable media is not permitted in the PA. This would include writeable CDs, music CDs, floppy disc, computer drives of any type, etc.
 - 13.3.15.2.2. When escorting with a one Q-cleared to five uncleared ratio, escort will pick up a security radio at a location designated by the Company.
 - 13.3.15.2.3. Entry prior to 7:00AM is not authorized unless coordinated in advance by the STR.
 - 13.3.16. At work completion, Seller shall complete the disposition of all matters related to Seller escort personnel including return of photo badges and “green cards,” return of dosimeters, radios and other Company-furnished items.
 - 13.3.17. Failure of the Seller’s escorts to comply with escorting requirements could result in a security infraction issued to an escort. Depending on the security infraction, the escort could be barred from Y-12 while clearance status is evaluated, and could result in the permanent loss of their Q-clearance.
- 13.4. Information Security

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Attachment 1: Training Requirements

MODULE TITLE	DURATION	FREQUENCY	PROVIDED BY
<i>GENERAL EMPLOYEE TRAINING (GET)</i>			
Basic General Employee Training	4 hours	Every 2 years	Company
Oak Ridge Reservation (ORR) Employee Emergency Plan	½ hour	Once	Company
Annual Security Briefing	½ hour	Every Year	Company
Fire Extinguisher Required Read	½ hour	Every Year	Company
Hazard Recognition Training	½ hour	Once	Company
<i>INDUSTRIAL HYGIENE AND HEALTH</i>			
Initial Hearing Conservation Program			Seller
Hearing Conservation Program Refresher			Seller
American Red Cross – Cardio Pulmonary Resuscitation (CPR)			Seller
American Red Cross – Standard First Aid			Seller
Hazard Communication			Seller
Lead Worker Protection			Seller
Hazardous Waste Operations and Emergency Response Initial Training (HAZWOPER)	40 hours	Once	Seller
HAZWOPER Refresher Training	8 hours	Every 3 years	Seller
HAZWOPER Supervisor Training	8 hours		Seller
Asbestos Abatement Worker Initial Training	32 hours	Once	Seller
Asbestos Abatement Worker Refresher Training	8 hours		Seller
Asbestos Abatement Supervisor Initial Training	40 hours	Once	Seller
Asbestos Abatement Supervisor Refresher Training	8 hours		Seller
Confined Space Supervisor (when working under Company's Program)	2 hours	Once	Company
Confined Space Supervisor Training (when using Company approved Seller program)	2 hours	Once	Seller
Beryllium Worker Training	4 hour	Every 2 years	Company
<i>INDUSTRIAL SAFETY</i>			
Authorized Entrant/Attendant for Confined Space Entry (When using Company approved Seller program)			Seller
Authorized Entrant/Attendant for Confined Space Entry (When using Company program)	3 hours	Once	Company
Reserved			
Lockout/Tag-out Training (Company's Program)	8 hours	Once	Company
Lockout/Tag-out Training Refresher (Company's Program)	2 hours	Every year	Company
Fall Protection & Prevention Safety Awareness Training	2 hours	Once	Company
Fire Watch Training	3 hours	Every year	Company
Issuing Authority/Service Supervisor (IA/SS) for Welding & Burning (required for Hot Work and Excavation Permits)	2 hours	Once	Company
Scaffold User Training	3 hours	Once	Company/Seller
Electrical Safety Program			Seller
Ladder Training			Seller
<i>MOBILE EQUIPMENT/HOISTING AND RIGGING</i>			
Operator Competency Test	1 day	Once (Per Equipment Type)	Company
Competent Person Rigger Test	1 day	Annual	Company
Aerial Lift Safety Qualification/Re-qualification			Seller

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Training Requirements (Continued)

PERSONAL PROTECTIVE EQUIPMENT			
<i>PPE Awareness and Proper Use (Prior to use)</i>			<i>Seller</i>
RAD WORKER			
Rad Worker II (if applicable to specific task) Note: Seller may arrange training through BJC. Test and practical is only with the Company	20 hours	Every 2 years	Company or BJC
Personal Radiation Dosimeter Instrument (PRDI) Required Read	1 hour	Once	Company
MODULE TITLE	DURATION	FREQUENCY	PROVIDED BY
RESPIRATORY PROTECTION (PPE)			
Basic Respirator Training (when wearing Company-furnished Respirator)	2-1/2 hr-Class 2-hour Fit Test	Every year	Company
Basic Respirator Training and Fit Test (only required if wearing Seller-furnished Respirator)			Seller
Respirator Fit-Test (when wearing Company-furnished Respirator)	1 hour	Every year	Company
Supplied Air Respirator Training	3 hours	Once	Company
SECURITY			
Comprehensive Security Briefing (only required for L or Q cleared)	1 hour	Once	Company
Annual Security Refresher Briefing	½ hour	Every year	Company
UCNI/OUO Information Training	1-1/2 hour	Once	Company/Seller
Y-12 Plant Escort Training, Required Read or class room (retraining required for revisions)	1 hour	Initial and Revisions	Company
CT 401 Security Escort Training (when escorting uncleared personnel into an area with Classified Systems/Computers)	2 hour	Annual	Company
Overview for Escorting of Delivery, Service, or Vendor personnel	¼ hour	Each occurrence	Company
CONDUCT OF OPERATIONS (CONOPS)			
Facility Specific CONOPS Training (if applicable to specific task)	4 hours	Once	Company
Safety Basis 202 (work inside Protected Area)	2 hours	Every Two Years	Company
TRANSPORTATION SAFETY			
Federal Motor Carrier Safety Regulations			Seller
FMCSR Refresher			Seller
DOT Regulations for Material of Trade			Seller
Secure Load and Tie Down			Seller
MEDICAL ENROLLMENTS			
Confined Space			Seller
Asbestos			Seller
Hearing Conservation			Seller
Mobile Equipment Operator			Seller
Respirator Wearer			Seller
Thermal Stress			Seller
DOT			Seller
HAZWOPER			Seller

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Training Requirements (Continued)

<i>SELLER-SPECIFIC TRAINING</i>			
Environmental, Safety and Health (ES&H) Program		As Required	Seller
ES&H Plan		As Required	Seller
Quality Assurance Plan		As Required	Seller
Work Plan and other Plans		As Required	Seller
Activity Hazards Analysis (AHA)		As Required	Seller
Workplace Substance Abuse Program		As Required	Seller
<i>SELLER SPECIFIC TRAINING - UPF</i>			
Reinforcing Mechanical Splices		As Required	Seller
Penetration Closures and Seals		As Required	Seller
Handling of Chemical or Harmful Substances		As Required	Seller
Working On or Near Energized Circuits Safety Training		As Required	Seller
Thermal Stress		As Required	Seller
Powder-actuated Tools Training		As Required	Seller
Suspended Personnel Platform Training		As Required	Seller
Fork Lifts and Power Industrial Trucks Training		As Required	Seller
Back Injury Prevention Awareness Training		Monthly	Seller
Bloodborne Pathogen Training		As Required	Seller
Nonconformance Reporting and PAAA Awareness Training	1 hour	Once	Company
Construction Work Control Package Training	4 hours	Once	Company
Plan of the Week/Quantity Reporting Training	2 hours	Once	Company

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Attachment 2: Reserved

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Attachment 3: Information Security Unclassified Controlled Information

The Subcontractor must have a facility and a computing system that is capable of processing and storing unclassified documents and data per the requirements in the following sections.

Subcontractor personnel exposed to, or working with, Unclassified Controlled Information Data must be a U.S. Citizen and have proof of citizenship, must have a need-to-know, and must handle and protect unclassified data per the latest issuance of the Manual for Unclassified Controlled Information (UCI), Y19-206, provided by the Company. In order to handle, store, or process unclassified information at the Subcontractor's facility, the Subcontractor must be briefed by the Company, provide storage capabilities for the information, and establish computing system(s) in approved areas of the Seller's premises.

1. Subcontractor shall provide a Y-12 approved area in compliance with the following DOE Manuals:
 - a) *DOE Manual for Information Security*, DOE M 470.4-4, Chg 1, dated 6/29/2007;
 - b) *DOE Manual for Personnel Security*, DOE M 470.4-5, dated 8/26/2005;
 - c) *DOE Manual for Safeguards and Security Program References*, DOE M 470.4-7; dated 8/26/2005 and other related DOE Orders and Manuals involving any Y-12 approved physical, information, computing, and operational security requirements for the handling, processing, storage, and protection of unclassified information. Interpretation and additional requirements will be provided by Y-12 Safeguards and Security.

An area approved by the Company will be provided to process Unclassified Controlled Nuclear Information (UCNI), Official Use Only (OUO) information, and other Unclassified Controlled Information (UCI) as defined by the Company. Computers must be certified by the Company to process UCI. The Subcontractor will receive Company provided guidance and approval prior to commencing construction, modification, or declaration of such areas and equipment. All media processing Unclassified Controlled Information will be returned to the Company at the termination of the contract or upon termination of the certification of the computer. UCI information will be returned to the Company upon completion of a task with all media and UCI information being returned prior to termination of the contract. UCI requirements can be found in Y19-206 Manual for Unclassified Controlled Information.

2. Subcontractor personnel issued UCI Information shall complete the requisite training provided by the Subcontract Technical Representative (STR), a Y-12 Information Security Officer, or designee. Subcontractor personnel having access to information must complete the requisite training prior to access. All training must be maintained current.
3. Subcontractor personnel completing the required briefing may issue UCI documents to lower tier subcontractors and/or suppliers providing such parties are given the same requisite briefing by the Subcontractor who was initially trained by the Company. The Subcontractor will provide the STR with training records of all individuals trained including lower tier subcontractors and/or suppliers. The Subcontractor shall be responsible for the control of the UCI documents and media and is not relieved of this obligation for documents provided to others.
4. Subcontractor is responsible for the following:
 - a) Protect UCI information to which they have access or custody in accordance with Department of Energy and Y-12 National Security Complex manual of instructions.
 - b) No Company or Subcontractor information associated with Y-12 is released without review and approval by Y-12 for release restrictions.
 - c) Adherence to approved security plans regarding facility, information, and computer assets.

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- d) Access to UCI information is granted only to persons with a need-to-know and documentable evidence of United States citizenship.
- e) Owners of data are responsible for recognizing the sensitivity of information before it is used, processed, or stored on an information system and for ensuring the system is certified for the information.
- f) Notifications of security breaches or deviations from expectations shall be reported to the STR or Plant Shift Superintendent (PSS). The Subcontractor shall cooperate with the Engineering Division Security Officer (DSO) and Y-12 Safeguards and Security in the conduct of an inquiry of an incident. The Subcontractor is responsible for Subcontractor costs incurred because of Incidents of Security Concerns (IOSC).
- g) Provisions of these requirements flow down to lower-tier subcontractors and suppliers.

Definitions

- 1. Access authorization - An administrative determination that an individual is eligible for access to sensitive matter.
- 2. Automated Information System (AIS) - An assembly of computer equipment, facilities, personnel, software, and procedures configured for sorting, calculating, computing, summarizing, storing, and retrieving data and information.
- 3. AIS Equipment - All computer equipment, peripherals, software, data, networks, and facilities.
- 4. AIS security incident - A failure to comply with AIS security requirements, which results in attempted, suspected, or actual compromise of unclassified controlled information.
- 5. AIS Security Plan - A document that describes the protection of sensitive AIS against unauthorized disclosure, modification, or destruction of the system or data, and denial of service to process data, including physical, personnel, administrative, telecommunications, hardware, and software security features.
- 6. AIS storage media - A means used by AIS systems to convey or store information.
- 7. Computer Security Officer (CSO) - Subcontractor person(s) responsible for the implementation of their AIS Security Plan.
- 8. Information Security (INFOSEC) - A system of administrative policies and procedures for identifying, controlling, and protecting from unauthorized disclosure, information for which protection has been authorized.
- 9. Information Security Officer (ISO) - Subcontractor person(s) responsible for the implementation of requirements to avoid unauthorized disclosure of information.
- 10. Incident of Security Concern - A knowing, willful, or negligent action contrary to the requirements for information security.
- 11. Label - The marking of an item of information to reflect the sensitive information (e.g., UCNI, OOU, etc.).
- 12. Need-to-Know - A determination by an authorized person having responsibility for sensitive information that a prospective recipient requires access to information in order to perform official, approved, authorized tasks or services.
- 13. Official Use Only (OUO)—Unclassified sensitive information which may be exempt from public release under the Freedom of Information Act (FOIA).
- 14. Security Plan - A document that describes the protection of the facility and/or its assets.

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15. Unclassified - The designation for information, a document, or material that has been determined not to be classified or that has been declassified by proper authority. The information is not publicly releasable unless authorized by the Company. The information, document, or material may require additional protection if designated as Unclassified Controlled Information.
16. Unclassified Controlled Information (UCI) - Unclassified information for which disclosure, loss, misuse, alteration, or destruction could adversely affect national security or governmental interests. National security interests are those unclassified matters that relate to the national defense or foreign relation of the U. S. Government. Governmental interests are those related, but not limited to, the wide range of government or government-derived economic, human, financial, industrial, agriculture, technological, and law-enforcement information, as well as, the privacy or confidentiality of personal or commercial proprietary information provided to the U.S. Government by its citizens. In addition, other unclassified sensitive information is information that, based on a determination by competent authority, may require mandatory protection because of statutory or regulatory restrictions or may require a degree of discretionary protection because inadvertent or deliberate misuse, alteration, disclosure, or destruction could adversely affect national, Department of Energy/National Nuclear Security Administration (DOE/NNSA), or Y-12 interests.
17. Unclassified Controlled Nuclear Information (UCNI) - Certain unclassified government information prohibited from unauthorized dissemination as defined by the Atomic Energy Act of 1954, Amended.
18. FIPS - Federal Information Processing Standards. Standards and guidelines issued by the National Institute of Standards and Technology (NIST) as Federal Information Processing Standards (FIPS) for use government-wide. Specifically, applicable FIPS standards are included in FIPS 140-2.

Applicable Regulatory Requirements

1. Atomic Energy Act (Sects. 142 & 148)
2. Freedom of Information Act
3. 10 CFR 1017, Identifications and Protection of Unclassified Controlled Nuclear Information.
4. DOE O 470.1, Safeguards and Security Program
5. DOE O 471.1, Identification and Protection of Unclassified Controlled Nuclear Information.

Applicable Procedures and Policies

1. Y19-010PD, Operations Security (OPSEC) Program Description
2. Y19-115, Reporting and Handling Security Concerns, Events, and Compensatory Measures
3. Y19-117, Technical Security Countermeasures
4. Y19-143, Foreign Ownership, Control, or Influence (FOCI) and Contract Registration
5. Y19-206, Manual for Unclassified Controlled Information
6. SO-Y-12-10-010, Unclassified Controlled Information Media Encryption Requirements
7. Y19-401, Automated Information System (AIS) Security Handbook (OUO)
8. Y15-404, Acceptable Use of Information Technology Equipment
9. MUN08-00051-01, Rev. 1.0.03, Unclassified Master Information System Security Plan (Unclassified-ISSP)(OUO)

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10. Y30-205, Exporting Compliance for Foreign National Transactions: Commodities, Hardware, Software, and Information

Training requirements

1. Subcontractor personnel responsible for safeguarding UCI information shall be briefed by the Company on proper handling and storage requirements. The Subcontractor personnel must complete designated Unclassified Controlled Information training prior to handling the information.
2. The Subcontractor shall be responsible for briefing additional personnel who will have access to UCI information on the proper handling and storage.
3. Subcontractor personnel who handle, possess, or process unclassified controlled information must first successfully complete the Company administered Unclassified Controlled Information training.
4. Additional training, briefing, or instructions may be directed by the Company at the Company's discretion.

Document & Media Requirements

1. All communications between the Subcontractor and the Company, or between the Subcontractor and its lower-tier subcontractors/suppliers conveying UCI labeled information, shall be by approved carriers (e.g., Express, Certified, or Registered Mail) or a commercial carrier that uses a signature service. Electronic media shall be encrypted using Company approved FIPS 140-2 Level 1 or higher encryption modules.
2. No electronic transmissions (e.g., fax, computer) of UCI information will be allowed unless formally pre-approved by the Company.
3. No transmissions via computer of UCI information will be allowed unless formally pre-approved by the Company.
4. Fax transmissions of OUO should be protected by encryption. Unencrypted fax transmissions are permissible provided:
 - a) It is preceded by a telephone call to the recipient so that he or she can control the document when it is received or respond to the sender that the facsimile was not received as expected, and
 - b) The sender is assured by the recipient that the facsimile is, and will be, only in the possession of an individual who has the proper need-to-know and is a U.S. citizen. Although not required, it is encouraged that the sender obtains a positive response from the recipient that the fax was received as expected.
5. All computers at Subcontractor facilities shall be certified by the Company to process UCI information and shall operate in compliance with a Company-approved AIS Security Plan. The Company shall approve the area where the AIS equipment is located. Subcontractor shall submit a request for a certification inspection by the Company.
6. If Subcontractor desires to establish a secure document room, submit a request to the Company for a certification inspection. Once the room is certified, documents designated in the Security Plan may be displayed as long as the room is locked when unattended.
7. UCI documents shall be kept in a secure place at all times. The Subcontractor shall be responsible for control of documents issued to them by the Company. Further issuance of documents to lower tier subcontractors and/or suppliers does not relieve the Subcontractor of this responsibility.
8. If required, the Subcontractor shall install encryption software in compliance with Company instructions.

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9. Computer systems and media containing UCI information at the Subcontractor's facility and at lower-tier subcontractors' facilities shall be dedicated to this work. UCI information requires removable media including boot drives and drives which data is contained. In cases where UCI information is contained on removable media (e.g., removable hard drives), a machine may be used for other purposes; however, all media must be removable, including boot drives. All media must be encrypted by Y-12 approved FIPS 140.2 Level 1 or higher encryption methods.
10. The Company will certify the AIS equipment and its physical location at the Subcontractor facility and at associated lower-tier subcontractors' facilities. Subcontractor shall schedule certification visit through the Company a minimum of ten (10) workdays prior to need.
11. The Company and/or DOE/NNSA will perform regular and unannounced assessments relative to approved information, computer, and physical security plans.
12. Modifications to the Subcontractor's AIS and/or Security Plans shall be presented to the Company before implementation. The Company will approve and/or certify the modification before the Subcontractor implements the modification.
13. The Subcontractor shall return all UCI electronic data and data media to the Company. The Subcontractor and the Company will retain an accountability of media and contents. When lower-tier subcontractors and suppliers have completed their work, the associated data media and materials shall be forwarded to the Subcontractor.
14. The computers associated with UCI will be sanitized by the Company and will no longer be considered germane to the security concern. All media involved in handling UCI will be returned to the Company for accountability and destruction.

Subcontractor Information Security Officer (ISO) Responsibilities

The Subcontractor shall appoint in writing to the STR a qualified Q-Cleared individual or individual capable of obtaining a Q-Clearance, if necessary, and alternate to serve as the principal contact between the Company and the Subcontractor regarding information security. The responsibilities of the position include but not necessarily limited to:

1. Representing the Subcontractor/lower-tier subcontractors concerning Information Security (INFOSEC) issues.
2. Ensuring implementation of, and compliance with, all INFOSEC requirements.
3. Reporting INFOSEC-related incidents to the Company and participating in the inquiry of incidents.
4. Performing an annual INFOSEC self-assessment.
5. Determining INFOSEC training needs and ensuring training is conducted in a timely manner.
6. Disseminating periodic INFOSEC awareness material to employees who have responsibilities that include protection and control of sensitive information.
7. Attending meetings and training sessions as requested by the Company.

NOTE: Only the Company or a Company-trained and certified individual will classify and mark documents. Subcontractor shall protect at the highest level marked on any documents contained in the Subcontract Documents.

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UCNI Access Requirements

Access to UCNI shall be provided only to those authorized for routine access. Routine access refers to the normal exchange of UCNI during the conduct of official business and allows for further dissemination of UCNI if the requirements in Item (2.) below are met.

1. Authorized individual—An authorized individual, who may be the originator or possessor of UCNI, may grant routine access to UCNI to another person eligible for routine access to UCNI (see Item 2 below) by giving that person UCNI documents and providing assurance that the individual is briefed in the handling of UCNI. No security clearance is required. The recipient of the UCNI documents becomes an authorized individual for that specific UCNI.
2. Eligibility for routine access—to be granted routine access to UCNI, a person must “need to know” the specific UCNI in the performance of official duties. In addition to the need-to-know requirement, the person must be a U.S. citizen. Non-U.S. citizens (i.e., foreign nationals) are not allowed any access, casual or otherwise, to UCNI information or media. Verification of U.S. Citizenship must be determined, and a copy of the document retained by the Subcontractor, by one of the following:
 - a) Birth Certificate (certified copy with raised and/or colored official seal - issued by government/municipality [not issued by hospital])
 - b) Certificate of naturalization (Immigration and naturalization Services (INS) Form N-550 or N-570),
 - c) Certificate of U.S. Citizenship (INS Form N-560 or N-561),
 - d) Report of Birth Abroad of a citizen of the United States of America (Form FS-240), or
 - e) U.S. Passport (active or expired, with picture that still looks like person).
3. Dissemination limitations—an authorized individual may disseminate UCNI only to a person who is eligible for routine access to UCNI and is briefed to handle UCNI. The Company will provide initial briefing to Subcontractor personnel in the handling of UCI documents and the Subcontractor shall brief lower tier subcontractors and suppliers in the handling of UCI documents by individuals directly briefed by the Company. The Subcontractor shall forward completed Company supplied attendance sheets to the Company’s STR.

OUO Access Requirements

A person accessing OUO documents shall be a U.S. Citizen. If a foreign national has a “need to know” OUO information, the Subcontractor shall obtain approval from the Company before supplying.

Paper Documents, Materials, and Equipment

1. Store UCI to preclude unauthorized viewing and disclosure. If an area is neither controlled nor guarded, UCI documents, material, or equipment shall be stored in a locked container or locked room, which has been certified by the Company, to which only individuals authorized for routine access to UCI have entry.
2. Reproduction of UCNI/OUO shall be limited to the minimum number of copies necessary to carry out official duties. Reproduced copies shall be protected in the same manner as the original document. Copy machine malfunctions shall be cleared with all paper paths checked for UCNI/OUO material. Completion of reproduction shall be followed by processing three blank sheets through equipment. Reproduction of UCNI and OUO shall not be performed on digital equipment, including digital copiers, without prior approval of the Company. The Company shall approve reproduction of UCNI material by a commercial reproduction provider not wholly owned by the Subcontractor prior to reproduction.
3. Transmission of UCI matter shall be by means that preclude unauthorized disclosure or dissemination.

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4. The following applies to documents transmitted outside an approved facility:
 - a) Documents marked as UCNI or OUO shall be packaged in a single, opaque envelope or wrapping. The envelope shall be sealed and marked TO BE OPENED BY ADDRESSEE ONLY.
 - b) Any of the following U.S. mail methods may be used: Express, Certified, or Registered Mail.
 - c) Any commercial carrier using a signature service may be used.
 - d) An authorized individual may hand carry the matter as long as he/she can control access.

Matter transmitted within an approved facility

1. A standard distribution envelope, such as the U.S. Government Messenger Envelope, a solid manila envelope, or equivalent, may be used.
2. An authorized individual may hand carry the matter as long as he/she can control access.

Destruction of OUO and UCNI matter

The Subcontractor shall return all UCI information, including media, supplied by the Company or generated by the Subcontractor or lower tier subcontractors and/or suppliers.

NOTE: At the conclusion of the task or contract, the Subcontractor shall provide written notification to the STR stating the documents were returned to the Company for destruction.

Infractions and Incidents

1. Failure to comply with requirements specified herein may result in a security infraction.
2. Any person who violates applicable civil law under Atomic Energy Act provisions is subject to civil penalties or may face criminal prosecution.

Computer Security

The Subcontractor shall appoint in writing to the STR a qualified individual and alternate to serve as the principal contact between the Company and the Subcontractor regarding computer security. The Subcontractor Computer Security Officer (CSO) is responsible for:

1. Ensuring the implementation of, and compliance with the AIS Security Plan.
2. Representing the Subcontractor/lower tier Subcontractors for computer security issues.
3. Coordinating general AIS security briefings.
4. Reporting AIS-related security incidents to the Company and participating in the inquiry of incidents.
5. Coordinating the certification of computer systems processing UCI information with the Company.
6. Ensuring that the AIS system described by the AIS Security Plan has been certified prior to use.
7. Taking immediate action to resolve AIS security deficiencies.

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Important Information

1. Only locations that meet the security requirements will be permitted to process UCI information and shall be approved by the Company.
2. The AIS Security Plan serves as the formal security record of the system. An AIS Security Plan shall be prepared for each system that processes UCI information.
3. A risk assessment shall be performed by the Subcontractor to document any threats, concerns, and vulnerabilities that may exist related to their computer systems.
4. An AIS processing UCI information shall be re-certified by the Company every three (3) years or when changes occur that affect the security posture of the system. A configuration modification of hardware, system software, or layered products may be cause for recertification of a system. The Company must approve modifications that change the security posture of a system prior to implementation.

UCI AIS Resources and Information

1. It is the responsibility of the Subcontractor to know and provide the degree of protection required for a type of information being processed.
2. All computer security incidents involving UCI information or AIS resources shall be reported to the Company, including:
 - Fraudulent action involving AIS.
 - a) Processing of information without an approved Security Plan.
 - b) Leaving a session active while not properly protected (e.g., unattended, unsupervised).
 - c) Unauthorized testing of a certified AIS.
 - d) Printer ribbons, cards, diskettes, hardcopy output, and/or magnetic media left unattended (not properly physically protected).
 - e) Disclosure of sensitive information (e.g., failure to protect data files properly).
 - f) Hackers/crackers or other unauthorized access attempts.
3. System hardware components shall be marked to indicate the most restrictive category of information processed, as directed by the Company. Labels shall be placed on central processing units (CPUs), video display units, printers, disk drives, and any other input/output devices except keyboards, speakers, and mouse(s) unless otherwise directed by the Company.
4. AIS equipment shall be sanitized of all UCI information before connecting to a network or computer system of a lower category or before equipment is removed from service.
5. All voice and electronic data transmissions of UCNI information shall be over secure telephone unit (STU III) or approved encrypted communication links. Applications utilized across Internet or distribution of sensitive information over Internet is not permitted unless through encryption (i.e., Entrust or Company approved encryption methods) and then only after certification by the Company. When new computing systems or networks are connected to existing approved networks, they shall be documented and approved by the Company before connection and use.
6. All voice transmissions of OOU information shall be made over physical landlines and shall not utilize cellular phone transmissions or cordless phones.
7. Access controls shall be used to prevent unauthorized access to information.

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Physical Security

1. AIS processing UCI information require a combination of physical controls and administrative controls. The location of each multi-user system shall be reviewed and approved by the Company.
2. Company will certify physical controls including rooms. Physical controls and administrative controls will resist surreptitious entry.

Personal Workstations

For personal workstations, the primary security feature is physical access control for the information. Access to the computer may be further restricted by the hardware and software controls as follows:

1. In offices with lockable doors and resistant to surreptitious entry, no hardware security devices are required as long as the room is locked when unattended. Alternative options will be considered by the Company.
2. In open offices and where there is not a common need-to-know of all information, appropriate protective measures (e.g., chassis locks, keyboard locks, monitor shields, or approved hardware password devices) are required as directed by the Company.

Locations of monitors, printers, and other output devices

The monitor, printer, and any other output device of an AIS processing UCI information shall be positioned to prevent casual viewing by unauthorized personnel.