

Contractor Safety & Health Field Manual

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1.0 PURPOSE:

- This Contractor Safety & Health Field Manual establishes AM/NS Calvert's commitment to safety and prevention of occupational injuries and illnesses, prevention of damage to equipment and property during contractor work activities, the protection of the general public from adverse effects of site operations and to the prevention of environmental degradation.
- The standards established in this policy are the minimum acceptable level; however, to the extent that local, state, federal or any other applicable standards and/or regulations are applicable and more stringent, those standards must be followed. Contractors are required to utilize the practices and procedures which are appropriate for specific activities. Environmental protection and occupational safety and health must never be sacrificed due to an emphasis on operations. Each contractor employee must be personally committed to performing work safely. Contractors are solely responsible for the safety of their employees.

2.0 CONTRACTOR RESPONSIBILITIES:

- Contractors and subcontractors are fully responsible for and accountable to see that the applicable procedures; federal, State, and local regulations; and best practices are established and enforced, in addition to ensuring that effective training programs are conducted.
- Ensure that the requirements in this field manual **as they pertain to the scope of work**, and associated documents, are implemented and enforced for each contractor and subcontractor prior to the contractor beginning work.
- Perform field audits/observations on the contractor/subcontractor under their direct control.
- Ensure the area in which contractor/subcontractor employees are working maintains a safe work environment free of recognized hazards.
- Coordinate with AM/NS Calvert Contractor Coordinator and the AM/NS Calvert Safety & Health Team for all Safety and Health related issues.
- Using the Contractor Work Permit, ensure a final inspection of the job and the work area is performed to make certain that the job has been completed satisfactorily and no hazards or housekeeping issues exist.
- Identify hazards in specific work areas and correct these hazards if directly responsible. If the contractor is not directly responsible, halt work and contact the AM/NS Calvert Contractor Coordinator to correct the issue prior to resuming work.
- Establish and maintain an effective Environmental, Health, and Safety Program and associated training.
- Ensure required training for employees is documented via contractor training cards employees are to keep on their person and by training records entered in ISNetwork.

3.0 REFERENCES:

- OSHA Publication 3071
- OSHA Occupational Heat Exposure webpage
- OSHA Unguarded Protruding Steel Rebar E-Tool
- 29 CFR 1910
- 29 CFR 1926
- ASME B30.5
- ASME B30.2
- ANSI B56.1
- ANSI D6.1
- NFPA 51
- NFPA 70E
- ANSI/ASSE A10.12-2005 Excavation Standard

4.0 DEFINITIONS:

- **ALCOHOL:** Any beverage or substance containing alcohol, ethyl alcohol or ethanol. Energy drinks that contain alcohol are strictly prohibited on site.
- **COMBUSTIBLE LIQUID:** Any liquid having a flashpoint at or above 100 °F (37.8 °C).
- **COMPETENT PERSON:** One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
- **CONFINED SPACE:** Space that meets the following requirements:
 - Is large enough and so configured that an employee can bodily enter and perform assigned work; and
 - Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
 - Is not designed for continuous employee occupancy.
- **CONTRACTOR:** A company or individual hired by AM/NS Calvert (excluding AM/NS Calvert Employees) that includes individuals of companies that own equipment/provide services onsite in which: interact with the manufacturing process; involve construction, demolition or modification of mill facilities or equipment; or services expose contractor employees or AM/NS Calvert employees to significant hazardous conditions.
- **CONTRACTOR COORDINATOR:** AM/NS Calvert Employee directly responsible for coordinating AM/NS Calvert work of a specific contractor.
- **CONTRACTOR PROJECT MANAGER:** This is the project leader of the contractor company (employed by the Contractor). The Contractor Project Manager may retain subcontractors on

an as-needed basis if the subcontractors have been approved in ISNetworld or otherwise by AM/NS Calvert Safety.

- **CRITICAL LIFT:** A lift that meets at least one of the following criteria:
 - The item being lifted is unique, would be irreplaceable or not repairable and is vital to a system, facility or project operation if damaged
 - The cost to replace or repair the item being lifted or the delay in operations of having the item damaged would have a severe negative impact on the facility, organization or budget to the extent that it would affect program commitments
 - The item, although non-critical, is to be lifted above or in close proximity to a critical item or component.
 - The load being lifted is 75 percent or more of a mobile crane's chart rating for the maximum radius that will be experienced.
 - Two or more pieces of equipment lifting a load
 - A personnel basket is being lifted
 - It is determined to be critical by the Safety Team, Contractor or Contractor Coordinator.
- **EXCAVATION:** Any mmade cut, cavity, trench, drilling, scraping, penetration or depression in an earth surface, formed by earth removal or displacement. For this program this means any manual dig greater than 1 foot in depth or any mechanical dig regardless of depth. This would also include driving posts or rods and jack hammering.
- **FLAMMABLE LIQUID:** Any liquid having a flashpoint below 100 °F (37.8 °C), except any mixture having components with flashpoints of 100 °F (37.8 °C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.
- **HAZARD IDENTIFICATION, RISK ASSESSMENT AND CONTROL (HIRAC) Lite Form:** Job safety planning tool used for jobs that do not have a standard work instruction AND hazard assessment completed. Copies of these forms are available at each Lead Safety Specialist's desk.
- **HOT WORK:** Any job or activity that uses or produces flames, sparks and/or heat that could act as an ignition source for any flammable or combustible liquid, gas or combustible material in the work area
- **IDLH:** A hazard that is immediately dangerous to life or health.
- **Illegal Drug:** Any drug which is not legally obtained. Illegal drugs include prescribed drugs not legally obtained and prescribed drugs not being used for prescribed purposes or in a prescribed manner.

- **Incidents/Accidents:** Unplanned and unintentional events that result in harm or loss to contractor employees, AM/NS Calvert Team Members, property, production, or almost anything that has some inherent value.
- **Near-Miss:** An event that may not result in harm or loss to employees, property or anything that has some inherent value, but has the potential to do so.
- **Permit-Required Confined Space:** A confined space that has one or more of the following characteristics:
 - Contains or has a potential to contain a hazardous atmosphere;
 - Contains a material that has the potential for engulfing an entrant;
 - Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
 - Contains any other recognized serious safety or health hazard.
- **TRENCH:** AM/NS Calvert recognizes a trench as a narrow excavation with vertical faces. In general the depth is greater than the width and there is no sloping or benching of the side walls. A trench is typically dug with a trenching machine that uses a chain drag to dig an opening equivalent to the size of pipe or cable to be installed, (2-12 inches wide) or a narrow hoe bucket, (12 – 24 inches wide). A trench is not typically used for team member entrance. On trenches where team members must enter the excavation they shall be protected with a trench box or other suitable shoring prior to entry.

5.0 TOOLS OR EQUIPMENT REQUIRED:

- N/A

6.0 PROCEDURE:

6.1. General Safety Rules

- 6.1.1. Contractors shall understand and advise their employees on the emergency procedures associated with their particular work area in case of fire, chemical release, explosion, medical emergency, or any other emergency.
- 6.1.2. Contractor employees must report all injuries, illnesses, property damage, and near misses to their supervisor. The contractor must report the incident to the AM/NS Calvert Contractor Coordinator and/or AM/NS Calvert Safety & Health Team. All injuries occurring onsite must first be evaluated by Calvert Fire & Rescue.
- 6.1.3. Horseplay, fighting, practical jokes, poor housekeeping, and other acts that can adversely impact the safety or well-being of Contractor Employees are strictly prohibited.

- 6.1.4. Illegal drugs, alcohol or weapons (other than knives considered tools for specialty work or that have a blade 3 inches or less) are prohibited from the AM/NS Calvert site.
- 6.1.5. Contractor employees shall not be allowed to perform work under the influence of any substance, including but not limited to prescription medication or over the counter medication that impairs their ability to perform all aspects of their job safely.
- 6.1.6. Ensure all required permits for the job(s) have been obtained and are in place (i.e. confined spaces, burning, line breaking, welding, other hot work, and excavation activities).
- 6.1.7. If you are not sure of instructions and/or training given with regard to safety procedures and/or work methods for the assigned task, ask your AM/NS Calvert Contractor Coordinator for clarification prior to starting work.
- 6.1.8. On multiple contractor sites, the contractor shall take the necessary steps to ensure timely and adequate exchange of information between affected groups.
- 6.1.9. Tools, equipment and machinery brought to the AM/NS Calvert site are in good condition and, where necessary, properly equipped with safeguards.
- 6.1.10. Explosives are prohibited from the AM/NS Calvert site.
- 6.1.11. Contractors must keep Competent Person Certifications for various competency functions (for example: scaffolding, fall protection, etc.). These records must be available for review if requested.
- 6.1.12. Contractors may not make any connection to electrical, gas, steam, air, oxygen, nitrogen, acid, water, hydraulic, sewer, or process line unless authorized by the designated AM/NS Calvert Contractor Coordinator. No discharges are to be made to the sewer without authorization of the AM/NS Calvert Environmental Management Department.
- 6.1.13. In the event an OSHA Compliance Officer wishes to conduct an investigation or inspection of the contractor at the AM/NS Calvert work site, it is the responsibility of the contractor to contact the AM/NS Calvert Safety prior to the OSHA compliance accessing the site. If AM/NS Calvert Safety cannot be reached, please call 251-289-3000 to have your call directed to a Safety Team Member.

6.2. Site Access

- 6.2.1. In the interest of security, contractors shall observe the following requirements relative to proper identification while on AM/NS Calvert premises:
 - 6.2.1.1. Site access badges will be issued to contractors who provide proof of online contractor safety orientation completion, valid ten-panel drug screen, alcohol screen and valid photo ID. These badges must be visibly displayed at all times while on AM/NS Calvert property and used only by the individual the badge was issued to. Security should be notified immediately when a badge is lost or misplaced to prevent unauthorized use. There is a \$30.00 charge for a replacement badge.

6.2.1.2. Parking passes will be provided to all contractors who drive a vehicle to the site and can provide proof of automobile insurance. Parking passes must be placed in a visible location on the front of the automobile. Contractors are ONLY allowed to park in designated parking lots as identified by AM/NS Calvert.

6.2.1.3. In the interest of protecting confidential and proprietary information of the Company, the use of camera, camera-phones or other audio or video recording devices on company property is strictly prohibited without advanced AM/NS Calvert approval.

6.3. Vehicle, Packaging and Locker Inspections

6.3.1. In an effort to promote a safe and secure workplace and protect the assets of AM/NS Calvert and the personal property of individuals onsite AM/NS Calvert reserves the right to inspect and inventory:

6.3.1.1. Vehicle contents while on AM/NS Calvert property and while entering or exiting the property.

6.3.1.2. Lockers, tool boxes and other containers located on site property that have been assigned, issued or otherwise made available to contractors.

6.3.2. Vehicle operators may be requested to unlock and open all closed compartments in their vehicle including but not limited to: hoods, trunks, luggage compartments, consoles, glove compartments and tool boxes.

6.3.3. Vehicle operators may be requested to display the contents in their pockets and any closed containers that they may possess such as lunch boxes, tool boxes, etc.

6.3.4. When removing materials/equipment from the site, the contractor must obtain a material removal pass from their AM/NS Calvert Contractor Coordinator and present a completed copy to Security for verification when leaving the site.

6.4. Substance Abuse Testing

6.4.1. AM/NS Calvert requires that each contractor shall, at their own expense, establish and implement a written Substance Abuse Program that meets the following requirements:

6.4.1.1. Applies to all contractor employees who enter the AM/NS Calvert site

6.4.1.2. Requires testing for illegal drug and alcohol use within 30 days before a new employee is assigned to enter the AM/NS Calvert site

6.4.1.3. Requires all contractor employees to re-test for illegal drug and alcohol use, at a minimum, on an annual basis (1 year)

6.4.1.4. Random testing for illegal drug use

6.4.1.5. Post-incident testing for illegal drugs and alcohol per AM/NS Calvert request

- 6.4.1.6. Reasonable cause testing for illegal drugs and alcohol per AM/NS Calvert request
- 6.4.1.7. Provision whereby employees determined to be using or under the influence of, selling, possessing or manufacturing illegal drugs or alcohol while on the AM/NS Calvert site shall be removed from the AM/NS Calvert site permanently
- 6.4.1.8. Contractor employees undergoing annual refresher Contractor Safety Orientation with substance abuse and alcohol tests within the past three (3) months can utilize these test results in lieu of substance abuse and alcohol tests within 30 days of their annual refresher date to renew contractor badges
- 6.4.1.9. Re-hires still must be tested within the last 30 days prior AM/NS Calvert site entry

6.5. Safety Coordinator Qualifications

- 6.5.1. Contractors with over 40 employees on site must employ a full-time qualified safety coordinator for every 40 employees on site. Contractors will employ a full-time safety coordinator, regardless of the number of employees, if the specific work activities are unusually difficult or hazardous, as identified by AM/NS Calvert.
- 6.5.2. Safety coordinators with a safety-related degree from an accredited college or university are preferred, but not required.
- 6.5.3. On site safety personnel for contractors must have a minimum of a 30-hour OSHA Construction Outreach training course (30-hour card) and at least five years of safety experience in Construction or a combination of Construction and General Industry.
- 6.5.4. In the event that the contractor has less than 40 employees on site, the contractor must have an onsite designated safety contact that has completed the 30-hour OSHA Construction Outreach training course (30-hour card).
- 6.5.5. Contractors with five or less employees on site throughout a calendar year will be required to have a designated safety contact person; however, the training requirements of this safety contact person will be considered on a case-by-case basis.

6.6. Contractor Work Permit and Pre-Task Preparation

- 6.6.1. Once approval is given to perform the work, each Contractor shall participate in the completion of a Contractor Work Permit for each job within the contract to help identify hazards associated with contractor work operations. This permitting process constitutes a pre-job meeting that shall jointly involve:
 - 6.6.1.1. AM/NS Calvert Mill Safety Specialists
 - 6.6.1.2. Contractor Project Manager
 - 6.6.1.3. Contractor Safety Representative
 - 6.6.1.4. AM/NS Calvert Contractor Coordinator
- 6.6.2. The Contractor Work Permit must be approved and signed by all individuals in section 6.6.1. prior to the contractor starting work.

- 6.6.3. The contractor must review the permit with their employees and the AM/NS Calvert Contractor Coordinator on a daily basis to ensure that hazard controls and awareness remain in place.
- 6.6.4. Each Contractor Work Permit is only valid for 24 hours until revalidated by Contractor Supervisor and AM/NS Calvert Contractor Coordinator. There can be a maximum of four revalidations of the permit – after which the permit is no longer valid.
- 6.6.5. If the work scope changes or new hazards are introduced then the contractor must stop work and repeat sections 6.6.1. and 6.6.2.
- 6.6.6. When the Contractor Work Permit is no longer valid or the work has been completed, the contractor must ensure that the Contractor Work Permit is closed out in conjunction with their respective AM/NS Calvert Contractor Coordinator.
- 6.6.7. Contractors must complete a HIRAC Lite prior to beginning each shift, task, or change within the scope of work.
- 6.6.8. Each HIRAC Lite must be submitted to the Lead Safety Specialist of that work area.
- 6.6.9. Exemption to these requirements may be granted by AM/NS Calvert Safety & Health on a case-by-case basis as it pertains to routine operational support in which formal written work instructions and formal hazard assessments have been completed versus other contractor work.

6.7. Contractor Safety Meetings

- 6.7.1. All Contractors shall conduct safety meetings with their own employees at least weekly. A sign in sheet shall be kept by the contractor and shall include the subject, specific safety topic discussed and names of attendees.
- 6.7.2. A weekly site safety meeting will be conducted by AM/NS Calvert. Contractor safety coordinators or designated safety contact person are expected to attend every meeting while working on site. Written minutes and attendance records will be kept of these meetings.

6.8. Safety Enforcement

- 6.8.1. Contractors who are found by AM/NS Calvert to be committing a serious and/or repeat safety violation will be provided with an initial warning. After this initial warning, contractors may be subject to actions up to and including removal from the site.
- 6.8.2. Contractors found by AM/NS Calvert to be committing an IDLH safety violation will be removed from the site and the contractor job will be stopped until proper course of action is determined.
- 6.8.3. Contractors are expected to discipline their employees appropriately for safety violations.

- 6.8.4. AM/NS Calvert reserves the right to prohibit any individual from accessing or working on its site and/or may request that the contractor take certain other actions, such as re-training.
- 6.8.5. AM/NS Calvert must approve the re-entry of any individual who is removed or banned from the site.

6.9. Safety Inspections, Audits and Reviews by Contractors

- 6.9.1. Safety/housekeeping audits of all work on site by that particular contractor will be conducted.
- 6.9.2. Focused inspections will be conducted as needed based on needs identified by the contractor or AM/NS Calvert.
- 6.9.3. The Contractor shall be responsible for performing all inspections required by local, state, federal agencies (OSHA, EPA, etc.), all inspections per manufacturer recommendations/requirements, and any other required/recommended inspections/audits.

NOTE: All inspection/audit results shall be made available to AM/NS Calvert upon request.

6.10. Contractor Incident/Accident Reporting, Response and Investigations

- 6.10.1. ALL INCIDENTS/ACCIDENTS AND NEAR MISSES MUST BE IMMEDIATELY REPORTED TO AM/NS CALVERT SAFETY.
- 6.10.2. All injured contractor personnel must be evaluated first by AM/NS Calvert Fire & Rescue.
- 6.10.3. An **INITIAL WRITTEN REPORT** (AM/NS Calvert's "Incident Analysis Report") will be provided to AM/NS Calvert Safety in a timely manner. The goal is to provide this report **within 2 hours** of the incident, but must be submitted by the end of the shift. The contractor may provide a copy of their internal report at their discretion.
- 6.10.4. All sections of the report should be completed **as soon as possible**.
- 6.10.5. The contractor will notify the closest OSHA area or regional office **within eight hours** if the incident involves a fatality or hospitalization (admitted to hospital) of one or more contractor employees injured onsite.
- 6.10.6. In the event of a medical emergency:
 - 6.10.6.1. Injured contractor employee(s) or other contractor employees will directly notify AM/NS Calvert Fire & Rescue via emergency telephone number (251-289-4911).
 - 6.10.6.2. AM/NS Calvert Fire & Rescue personnel can respond and treat the injured person or transport the person to the hospital for treatment.
 - 6.10.6.3. The contractor company will be responsible for notifying the contractor employee's emergency contacts.

6.11. Hazard Communication

- 6.11.1. Contractors whose employees work with hazardous chemicals, or may come in contact with them, must provide appropriate information and training as well as implement their own Hazard Communication Program as per 29 CFR 1910.1200.
- 6.11.2. Contractors must comply with the new Global Harmonization System (GHS) requirements.
- 6.11.3. All Contractors **must** complete and submit a New Sample Chemical Request Approval Form for **any** new chemicals and products brought onto AM/NS Calvert property via instructions on ISNetwork or to the AM/NS Calvert Contractor Coordinator. This form must be approved by AM/NS Calvert Environmental, Safety, and Fire & Rescue Teams prior to bringing the chemical/product onsite.
- 6.11.4. At least monthly, contractors must furnish an inventory of all chemicals brought onto AM/NS Calvert property via instructions on ISNetwork or directly to the AM/NS Calvert Environmental Team.
- 6.11.5. The contractor shall maintain a copy of MSDSs (SDSs) and make them easily accessible for review at any time while onsite.
- 6.11.6. For procedures concerning waste generation and disposal for contractors, consult Annex N of your contract or contact the AM/NS Calvert Environmental Team.

6.12. Utilities Identification and Protection

- 6.12.1. Contractors must ensure onsite public and private utilities that could be affected by their work are identified and appropriate control measures are taken to avoid damage to these utilities, loss of power, fire, explosion, flooding, and loss of life or serious injury.

6.13. Housekeeping

- 6.13.1. Contractors are responsible for housekeeping in their areas. The following are general housekeeping practices:
 - 6.13.1.1. Locate and pile materials in such a way as not to create a hazard to persons or equipment or interfere with the operation of fire protection equipment. Floor loading limits must not be exceeded.
 - 6.13.1.2. Keep tools and working materials properly stored.
 - 6.13.1.3. Store trash, waste, and scrap in correct containers.
 - 6.13.1.4. Store materials and equipment in a stable position (tied, stacked, chocked, etc.)
 - 6.13.1.5. Do not store equipment/materials that block exits or emergency equipment.
 - 6.13.1.6. Keep small items in tool boxes or bins.

- 6.13.1.7. Keep stairways, doorways, walkways, window openings, and the floor clear of tools, debris, waste, electrical cords, welding leads, etc.
- 6.13.1.8. Ensure that work tables are occupied only by tools and materials required for work.
- 6.13.1.9. Clean up tools and work areas as the job progresses.
- 6.13.1.10. Use non-metallic ties to secure cords and hoses seven feet overhead or lay them flat on the ground and cover them to prevent damage.
- 6.13.1.11. Protruding nails in scrap lumber will be removed or beaten down immediately.
- 6.13.1.12. Glass drink bottles are not permitted on the jobsite.
- 6.13.1.13. All trash hauls must be tarped before leaving the site.

6.14. Monthly Color Coding Scheme for Contractor Equipment Inspections Performed

- 6.14.1. January/July 
- 6.14.2. February/August 
- 6.14.3. March/September 
- 6.14.4. April/October 
- 6.14.5. May/November 
- 6.14.6. June/December 

6.15. Fire Prevention and Protection

- 6.15.1. Contractors are responsible for ensuring that their Contractor Employees comply with all federal, state, local, and National Fire Protection Association (NFPA) requirements.
- 6.15.2. Contractors shall provide their own fire protection equipment.
- 6.15.3. Access to all available firefighting equipment and adequate means of egress shall be maintained at all times.
- 6.15.4. Fire protection equipment inspections must be documented and available for review.
- 6.15.5. All defective fire protection equipment shall be immediately replaced.
- 6.15.6. A fire extinguisher, rated not less than 20lbs., shall be provided within 35 feet, wherever more than five gallons of flammable or combustible liquids or five pounds of flammable gases are being used on the contractor's work site.
- 6.15.7. Portable fire extinguisher inspections must be documented and available for review.

- 6.15.8. Any impairment or modification of sprinkler systems to permit alterations or additional demolition must be approved by AM/NS Calvert Fire and Rescue prior to work beginning.
- 6.15.9. Maintain a minimum clearance of 15 feet on the street or roadway side and 5 feet on all other sides around all hydrants.
- 6.15.10. Maintain the quantity of flammable liquids at the work site to the quantity necessary for immediate use or application. Bulk quantities must be stored in an approved storage location that meets NFPA standards.

6.16. Crane Safety

- 6.16.1. Contractors shall comply with 29 CFR 1910, 29 CFR 1926 and applicable ANSI/ASME standards.
- 6.16.2. All operators must have their operating license available for review.
- 6.16.3. Contractor shall maintain qualification documentation for all crane operators working onsite.
- 6.16.4. The following documentation shall be immediately available upon request by AM/NS Calvert personnel while the crane is operating at the AM/NS Calvert work site:
 - 6.16.4.1. National Commission for the Certification of Crane Operators (NCCCO) or Equivalent OSHA Accredited Certification supported by written and practical testing
 - 6.16.4.2. OSHA 10-Hour Construction Safety Card
 - 6.16.4.3. DOT physical or physical in accordance with ASME B30.5
- 6.16.5. Crane operators must have at least six months of documented crane operating experience on the specific type of crane being used unless approved by AM/NS Calvert Safety. Records of this experience must be available upon request.
- 6.16.6. Operator certification and qualification requirements do not apply for mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair. Requirements do apply when this specific device is used for construction related activities.
- 6.16.7. Cranes to be brought onto the AM/NS Calvert site must have a copy of that crane's annual inspection performed within the last 12 months of the date the crane arrives at the AM/NS Calvert main gate.
- 6.16.8. Contractors must have crane hook non-destructive testing (NDT) certification(s) performed within 30 days of the date the crane arrives at the AM/NS Calvert main gate for each individual hook and block. If the crane is removed from the site, crane hook NDT certification(s) for each individual hook and block must be performed within 30 days of site re-entry.

- 6.16.9. A copy of the daily inspection of the crane is to remain on the equipment for the duration of the each shift. Annual inspections shall be maintained on the equipment at all times.
- 6.16.10. Any contractor performing a crane lift that meets the definition of a critical lift must first develop a critical lift plan and have that plan approved by AM/NS Calvert Safety and AM/NS Calvert Management prior to performing the lift.
- 6.16.11. The Critical Lift Plan shall include, but not be limited to, the following:
- 6.16.11.1. Specific written procedures shall be prepared and followed for all critical lifts.
 - 6.16.11.2. During critical lifts there shall be one person present that is designated as responsible for the safety of the operations. That person may be a safety professional, a supervisor, an engineer, or rigger.
 - 6.16.11.3. The size and weight of the load to be lifted, including crane (or other machine) and rigging equipment that add to the weight.
 - 6.16.11.4. The Original Equipment Manufacturer's maximum load capacities for the entire range of the lift shall be provided.
 - 6.16.11.5. The lift geometry, including the crane (or other machine) position, boom length and angle, height of lift, and radius for the entire range of the lift. This information is required for all cranes/machine lifts involved in a lift.
 - 6.16.11.6. A rigging plan, showing the lift points, rigging equipment, rigging procedures and certifications of rigging equipment.
 - 6.16.11.7. The environmental conditions under which lift operations are to be stopped.
 - 6.16.11.8. For lifts of personnel, the plan shall demonstrate compliance with the requirements of OSHA 29 CFR 1926 Subpart CC standard, 29 CFR 1926.1431 and ASME B30.23.
 - 6.16.11.9. For lifts in the vicinity of overhead power lines (i.e., if any part of the crane or other machine, including the fully extended boom of a telescoping boom crane or machine, the OSHA/ASME specified clearances for overhead power lines shall be maintained at all times unless the provisions of the OSHA 29 CFR 1926 Subpart CC standard, 29 CFR 1926.1410 are followed and documented as part of the Critical Lift Plan).
 - 6.16.11.10. The Critical Lift Plan shall be approved by Area/Team Manager and the Area Lead Safety Specialist.
- 6.16.12. The operator is responsible for the safe operation of the crane and rigging crew.
- 6.16.13. The swing radius of the counterweight must be barricaded with red danger barricade tape and tagged at all times.

- 6.16.14. A copy of the Manufacturer's Operation Manual, load chart and hand signals must be available on or at the equipment. Spotter(s) must be used when performing all lifts.
- 6.16.15. Never lift and swing loads over persons or manned workstations.
- 6.16.16. Use an audible alarm to warn that a load is being lifted, swung, or moved around the work area.
- 6.16.17. Lifted loads shall not be maneuvered over any work area or process with contractor or AM/NS Calvert personnel exposed to the raised load.
- 6.16.18. Before lifting and swinging a load over a work or process area, the contractor must ensure that authorization has been obtained from the appropriate AM/NS Calvert representative.
- 6.16.19. Because many of the mills have more than one overhead crane, contractors must look up to find the location of the crane.
- 6.16.20. Overhead/gantry cranes: All work activities that require access within 10' of the crane hot rail requires a crane interference permit and the hot rail be locked out and/or protected by an appropriate insulated blanket. The hot rail must be locked out during the installation of the insulated blanket.
- 6.16.21. Crane interference permits must be issued before interferences are introduced into areas with overhead cranes.
- 6.16.22. The permit shall be attached to the controls used to operate the overhead crane during the entire duration of the interference. If there is an instance where multiple controls can be used to operate the overhead crane, additional constraints are required of each operating method.
- 6.16.23. Pennant flagging shall be used as a warning and visual barrier for situations where interference with an overhead crane may be present. Pennant flagging shall be placed horizontally across the bay from column line to column line one (1) bay in advance of the planned work zone (when applicable). The center of the flagging shall drape down so it is visible from the operating area to give the crane operator(s) advance warning of the planned work zone.
- 6.16.24. Red Danger Barricade tape can be used in lieu of pennant flagging.
- 6.16.25. Mobile Crane Load Limits - Since the load rating for mobile cranes may be based on stability and hydraulic or structural competence, load ratings established by the manufacturers the load rating shall not be exceeded in operational application.
- 6.16.25.1. No crane shall be loaded beyond its rated capacity, except for load test purposes conducted by a qualified person.

- 6.16.25.2. Allowance shall be made for the weight of slings, shackles, spreader/hoisting beams, crane blocks and other below the hook lifting components that form a part of the crane load as defined in the manufacturer's manual.
- 6.16.25.3. When sizing rigging, an additional 25 percent safety factor shall be added to account for weight variations and other variable factors.
- 6.16.25.4. Durable rating chart(s) with legible letters and figures shall be provided with each crane and attached in a location accessible to the operator while at the controls.
- 6.16.25.5. A copy of the Crane Manufacturer's Manual and hand signals shall be available on or at the equipment.
- 6.16.25.6. All crane equipment shall comply with the manufacturer's specifications and limitations as defined in all manuals and documents provided for the crane and applicable to the operation.
- 6.16.25.7. Load Hoist Brake - When power-operated brakes that have no continuous mechanical linkage between the actuating and braking means are used, an automatic means shall be provided to set the brake to prevent the load from falling in event of loss of brake-actuating power.
- 6.16.25.8. Power Controlled Lowering - A power-controlled lowering system shall be provided and shall be capable of handling rated loads and speeds as specified by the manufacturer of the crane.
- 6.16.25.9. Booms, boom sections, and jibs shall be clearly identified and shall be used only for the purpose recommended by the manufacturer.
- 6.16.25.10. Counterweight - Cranes shall not be operated without the ballast or counterweight being in place as specified by the crane manufacturer. Under specific conditions, such as during crane assembly, unusual boom configurations, etc., the crane manufacturer's recommendations for the amount of ballast or counterweight shall be adhered to.
- 6.16.25.11. Ballast or counterweight as specified by the manufacturer shall not be exceeded.
- 6.16.26. Mobile Crane Operations - The following requirements apply to all personnel involved in the operation of a mobile crane.
 - 6.16.26.1. No one but the designated crane operator shall be allowed in or on the mobile crane while it is operating.
 - 6.16.26.2. Whenever there is doubt as to safety the operator or anyone else involved in the work has authority to stop operations.
 - 6.16.26.3. The operator shall not engage in any practice that will divert their attention while operating the crane.

- 6.16.26.4. When two or more cranes are used to lift one load (critical lift), one designated person shall be responsible for the operation. That person shall analyze the operation and instruct all personnel involved in the proper positioning, rigging of the load, and the movements to be made. That person shall also determine the necessity to reduce crane ratings, position of load, boom location, ground support, and speed of movement. See Appendix A for the Critical Lift Plan.
- 6.16.26.5. Determine that no one is working on the crane or is close to it before starting the engine or beginning to operate the crane.
- 6.16.26.6. Do not hoist two or more separately rigged loads in one lift, even though the combined load is within the crane's rated capacity.
- 6.16.26.7. When fueling the crane, stop the engine(s) and ensure that smoking or open flames are not permitted within 35 ft. of the fueling area.
- 6.16.26.8. Ensure that a 10-BC or larger fire extinguisher is installed at all operator stations. Fire extinguishers shall be maintained in a serviceable condition.
- 6.16.26.9. Do not store gasoline, acids, caustics, or cleaning solvents that emit toxic fumes in operating cabs. Store fuel in safety cans in safe locations.
- 6.16.26.10. Ensure that alternate egress routes are not blocked or locked on mobile units with operating enclosures.
- 6.16.26.11. When swinging the crane, watch out for centrifugal force. Swing the crane slowly to avoid an outward swing of the load. Attach a tag-line to the load if necessary to control the swing.
- 6.16.26.12. Use extreme caution when operating the crane near workers in elevated areas.
- 6.16.26.13. In the absence of crane manufacturer's instructions regarding maximum wind speeds for continued operations, the maximum wind speed for continued operations is 25 mph.
- 6.16.26.14. When a crane is to be operated at a fixed radius, the boom-hoist pawl or other positive locking device shall be engaged.
- 6.16.26.15. Tools, oil cans, waste, extra fuses, and other necessary articles shall be stored in the tool box, and shall not be permitted to lie loose in or about the cab.
- 6.16.26.16. Side loads are prohibited.
- 6.16.26.17. Keep speed slow in lifting and lowering loads.
- 6.16.26.18. Do not let the boom contact with any structure, equipment, etc.
- 6.16.26.19. Keep near-capacity loads as close to the ground as possible.

- 6.16.26.20. Adjustments or Repairs will be performed as required by manufacture and or accepted standards of maintenance by authorized personnel.
- 6.16.26.21. Hoist Limit Switch - Check all limit switches, if supplied, without a load on the hook at the beginning of each work shift or the first time the crane is used that shift. Inch each motion into its limit switch to ensure that two-blocking does not occur during the test. If a lift is in progress during a shift change, this testing requirement is considered to have been satisfied for the completion of that lift. However, test the limit switch again before the next lift.
- 6.16.26.22. Standard Hand Signals - The standard hand signals shall be as specified in the latest edition of the ASME B30 standards for the particular type of crane or hoist being used. All signalpersons shall be qualified.
- 6.16.26.23. Standard Voice Signals - Prior to beginning lift operations using voice signals, the signals shall be discussed and agreed upon between the person-in-charge, the crane operator, the appointed signal person and the riggers.
- 6.16.26.24. Special Signals - For operations or crane attachments not covered by standard hand, voice or audible signals, additions to or modifications of the standard signal procedures may be required. In all such cases, the required special signals shall be agreed upon in advance by the manager, person-in-charge, crane operator, signal person and riggers. These special signals shall not be in conflict with the standard signals.
- 6.16.26.25. The OSHA/ASME specified clearances for overhead power lines shall be maintained at all times unless the provisions of the OSHA 29 CFR 1926 Subpart CC standard, 29 CFR 1926.1410 are followed.
- 6.16.26.26. When assembly or disassembly of a mobile crane is required, contractor shall perform all work under the direction of a competent and authorized person.
- 6.16.27. When traveling the mobile crane:
- 6.16.27.1. Secure the boom and block.
- 6.16.27.2. Follow the crane manufacturer's recommendation for any travel.
- 6.16.27.3. Never travel a rubber-tired mobile crane with the boom over the side.
- 6.16.27.4. Never back up until it is determined that everyone is clear of the mobile crane.
- 6.16.27.5. Position the boom in the direction of travel for long moves.
- 6.16.27.6. Traveling with a load, pick and carry operations, is not allowed on-site.
- 6.16.27.7. The route to be traveled will be level, compacted and free of pot holes.
- 6.16.27.8. Tire size and type shall be per manufacturer's specifications.

6.16.27.9. Tires shall be in good condition.

6.16.27.10. Tires shall be inflated per manufacturer's specifications for lifting.

6.16.27.11. No one shall be permitted to ride on any mobile crane except the operator or driver.

6.16.27.12. When loading machine on the trailer, always use a ramp.

6.16.28. Overhead Cranes

6.16.28.1. Contractor supervision must obtain permission from the designated AM/NS Calvert Contractor Coordinator before their employees are permitted to board an overhead crane or enter a crane runway for any purpose.

6.16.28.2. Without the specific authorization from the designated AM/NS Calvert Contractor Coordinator, under no circumstances may Contractor employees operate any AM/NS Calvert overhead crane or mobile equipment, or walk on crane runways while overhead cranes are in operation

6.16.28.3. AM/NS Calvert crane operators will not make lifts for contractors unless instructed and authorized by the designated AM/NS Calvert Contractor Coordinator. It is the responsibility of the contractor to obtain authorization from the designated AM/NS Calvert Contractor Coordinator before requesting AM/NS Calvert crane operators to make lifts. The designated AM/NS Calvert Contractor Coordinator will arrange with the operating department to make the lifts. The contractor is responsible for directing the lifts.

6.17. Confined Space

6.17.1. AM/NS CALVERT FIRE & RESCUE MUST BE CONTACTED PRIOR TO ENTERING ANY PERMIT-REQUIRED CONFINED SPACE.

6.17.2. Contractors shall comply with all requirements specified in 29 CFR 1910.146 and the requirements below.

6.17.3. Contractors shall immediately isolate the space by placing guardrails, temporary cover or other barrier around the opening when unattended.

6.17.4. Ensure that lockout/tryout and isolation procedures have properly taken place.

6.17.5. The contractor shall test the internal atmosphere and document results before any contractor employee enters.

6.17.6. During permit required confined space entry, continuous monitoring must be performed. Monitoring instruments shall be positioned to evaluate the air Contractors are breathing while working in the space.

- 6.17.7. The Contractor shall provide at least one attendant outside the confined space. This person must be fully trained to perform attendant duties.
- 6.17.8. The Contractor shall verify that there is no possibility of engulfment (water, carbon dioxide, chemical materials, etc.).
- 6.17.9. All electrical cords, tools and equipment should be inspected for defects before use in a confined space.
- 6.17.10. All confined spaces must be emptied, flushed, or purged of harmful substances before entry.
- 6.17.11. To facilitate non-entry rescue, a retrieval system is to be used whenever an authorized entrant enters a permit-required confined space unless alternate means of rescue are established.
- 6.17.11.1. One end of a retrieval line is to be connected to a full body harness worn by the entrant.
- 6.17.11.2. A mechanical device must be available to retrieve personnel from vertical type permit-required spaces more than 4 feet deep (i.e. manholes, valve pits, etc.).
- 6.17.11.3. This requirement applies except when use of retrieval equipment would increase the overall risk of injury or would not contribute to the rescue of the entrant. Examples of permit-spaces where a retrieval system would not be required include:
- A. Obstructions or turns in space that would prevent pull on the retrieval line from being transmitted to the entrants
 - B. Projections in a space which could injure a person because of forceful contact
 - C. Situations where airlines, electrical cords or other retrieval lines present an entanglement hazard
- 6.17.12. When the atmosphere in a confined space is tested and found to be unacceptable, or where there is any potential for a hazardous atmosphere to develop while contractors are inside the space, continuous forced air ventilation must be provided.
- 6.17.13. No contractor may enter until forced air ventilation has brought the hazardous atmosphere within acceptable limits and the ventilation must continue until all contractors have left the space. NOTE: Continuous forced air ventilation alone does not constitute control of an atmospheric hazard. If the confined space requires forced ventilation to render an IDLH atmosphere safe, the space CANNOT be entered.
- 6.17.14. Continuous ventilation must be maintained where toxic atmospheres are generated by the work procedure such as welding, painting, cleaning or descaling operations.

6.17.15. The air supply for the forced air ventilation shall be from a clean source and may not increase the hazards in a space.

6.17.16. A fan may be positioned to either blow fresh air into the confined space (supply ventilation) or draw out contaminated air (exhaust ventilation).

6.18. Electrical Safety

6.18.1. Contractors must comply with OSHA Subpart S, National Electrical Code and NFPA standards.

6.18.2. Only trained, qualified electricians will repair or work on any electrical equipment, tools, wiring, power cords or power lines.

6.18.3. Always inspect tools and electrical cords before using. Document monthly inspections and color code tools with applicable monthly color scheme. Remove any tool or electrical cord from service if they are damaged or not functional.

6.18.4. No work is to be performed on or above any exposed energized electrical equipment, parts, or conductors above 50 volts unless an Energized Electrical Work Permit has been approved and issued to the contractor and the contractors have the appropriate NFPA 70E training. Failure to comply with this requirement can result in removal from the site.

6.18.5. Contractor must maintain safe boundaries as identified by arc flash labels on equipment

6.18.6. If induced voltage presents a safety hazard of any kind, then grounds shall be applied.

6.18.7. The following electrical activities, under normal circumstances, do not require an energized electrical work permit, but still may require electric protective PPE or arc flash protective PPE:

6.18.7.1. Verifying that equipment is de-energized (dead)

6.18.7.2. Using an appropriately rated device to measure voltage on energized equipment

6.18.7.3. Troubleshooting and running diagnostics on electrical equipment

6.18.7.4. Performing phasing verification

6.18.7.5. Adjusting all component levels

6.18.7.6. Performing battery maintenance (excluding cell change out)

6.18.8. Insulated high voltage cable shall not be disturbed or moved while it is energized without prior written approval by the AM/NS Calvert Power Distribution Area Manager or Mill Electrical Area Manager. Special precautions shall be taken to protect the cable while working in close proximity of high voltage cable in underground electrical vaults, manholes and cable trays.

6.18.9. All equipment shall be installed and used in accordance with the manufacturer's instructions, NEC standards or NFPA 70E standards, whichever creates a safer condition.

6.18.10. Steps shall be taken to maintain electrical equipment's insulation and enclosure integrity.

6.18.11. Making and breaking of electrical equipment under-load with the use of fuses is not permitted. The only exception to this will be for control voltages of 120 volts or less and may ONLY be done by a qualified electrician on a fuse holder designed to remove both ends of the fuse from the circuit.

6.19. Lead Safety

6.19.1. Contractors are responsible for complying with all applicable laws and standards regarding lead including, but not limited to, 29 CFR 1926.62, 29 CFR 1910 Subpart 2 and 29 CFR 1910.1200.

6.19.2. Before grinding, sanding, burning or welding on any surface potentially coated with lead paint, a test must be conducted to determine if lead is present in the paint.

6.19.3. Disposal of lead-based paint must be in compliance with EPA regulations and must be pre-planned with the AM/NS Calvert Environmental Team.

6.20. Mobile Equipment

6.20.1. Contractors must comply with 29 CFR 1926.952, 29 FR 1926.601, 29 CFR 1910.178, 29 CFR 1926.453, ASME B30.5 and ANSI B56.1.

6.20.2. Operators, regardless of other inspections, must make a daily check of brakes, horn, lights, clutch, mirrors, steering, and other devices required for safe operation. It is that Contractor's responsibility to ensure compliance with these requirements.

6.20.3. Minimum standards, including all OSHA required equipment, will be established with the equipment supplier by the Contractor.

6.20.4. Contractors will ensure that all major equipment and rental equipment are inspected with proper documentation upon arrival at the site according to equipment manufacturer's inspection and maintenance guidelines.

6.20.5. The Contractor is responsible for ensuring that all maintenance functions are performed on schedule and in accordance with all applicable manufacturer recommendations and OSHA regulations and documentation is available for review while onsite.

6.20.6. The Contractor shall ensure that each operator training documentation and certification shall be available onsite for review if requested by AM/NS Calvert.

6.20.7. The Contractor shall be responsible for the determination or choice of the proper equipment for the planned activity.

6.20.8. Operators must not leave the cab during operation.

- 6.20.9. All mobile equipment must be inspected daily at the start of the shift. A copy of the inspection must remain on the equipment for the duration of the shift.
- 6.20.10. Obey posted speed limits. Inside the mills the operating speed is the brisk walk pace of a pedestrian.
- 6.20.11. When leaving a vehicle unattended or when refueling, always shut the equipment's motor off and set the parking brake.
- 6.20.12. Seatbelts must be worn at all times when the equipment is in motion.
- 6.20.13. Anyone riding in or on any vehicle must be provided with a suitable seat with a seatbelt. Contractor employees are strictly prohibited from riding in the bed of a pickup.
- 6.20.14. Always yield right of way to railroad trains, fixed rail equipment, coil carriers, slab carriers and all types of mobile equipment and vehicular traffic. Contractor vehicles and mobile equipment are to stop, look, and listen at all rail crossings.
- 6.20.15. Cellular phones will not be used while operating any moving equipment such as trucks, pickups, cranes, forklifts, ambulances, auto-pump, vehicles of patrimonial security, locomotives, private vehicles, etc. Failure to comply can result in site suspension.
- 6.20.16. Always secure the load when transporting materials on vehicles.
- 6.20.17. Attach a red flag or red light on any load that extends more than four feet beyond the vehicle's rear or two feet in front of the vehicle. This is also required for loads wider than the equipment carrying the load.
- 6.20.18. A flagman must be used whenever a vehicle is being backed into a congested area and for activities in which equipment may come into contact with overhead utilities.
- 6.20.19. Mobile equipment that may contact overhead utilities requires a spotter or flagger.
- 6.20.20. Motors must not be left running in an enclosed area unless proper ventilation is provided to carry away the exhaust fumes.
- 6.20.21. If a forklift is used to lift a load below the forks, it must be equipped with the appropriate rigging adaptor.

6.21. Excavation and Trenching

- 6.21.1. In addition to the following requirements, all excavation and trenching operations shall follow OSHA Standards, CFR 1926 Subpart P, Sections 1926.650, 1926.651, 1926.652, and ANSI/ASSE A10.12-2005 Excavation Standard.
- 6.21.2. The contractor must first obtain an excavation permit from AM/NS Calvert.
- 6.21.3. The excavation may not proceed until all appropriate utilities have been located and an excavation permit has been approved and issued. The contractor must provide

contractor employees with detection equipment or other safe and acceptable means to locate installations.

- 6.21.4. Unless soil type is specifically tested and documented in accordance with OSHA testing requirements, it must be assumed to be of Type "C" Soil.
- 6.21.5. Daily inspections of excavations and trenches shall be made by the Contractor's Excavation and Trenching Competent Person.
- 6.21.6. If the excavation is 4 feet or deeper, it becomes a confined space and therefore requires a confined space permit.
- 6.21.7. If there is evidence of water accumulation, possible cave-ins, slides or hazardous atmosphere is noted, all work in the excavation or trench shall cease until the necessary precautions have been taken.
- 6.21.8. A qualified person shall determine the type of protective support system required and system designs must be submitted to AM/NS Calvert Safety for review and approval.
- 6.21.9. Protective systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer and approved by AM/NS Calvert Safety prior to use on site.
- 6.21.10. For access and egress of excavations four feet or deeper, extension ladders must have all sections in place and may not be disassembled to be used. Step ladders are not allowed to be used if collapsed. Straight ladders shall be tied off at the top and secured from movement while in the trench. If straight ladders are being used in the standing position they must be at a 4:1 climbing ratio. All means of access and egress must be located within 25 lateral feet of all workers.
- 6.21.11. OSHA compliant guardrails must be provided for walkways or bridges crossing over an excavation.
- 6.21.12. Placement of rebar protective caps or other acceptable protective devices will be installed on an ongoing basis throughout the shift and as work progresses, and **MUST** be completed by the end of each shift. New excavations shall not be started prior to the previous shifts rebar protective measures being completed.
- 6.21.13. Barricades must be installed around each excavation. Barricades must be visible both day and night.
- 6.21.14. Hard Barricades shall be installed on all open excavations where work is or is not being performed and shall be contiguous and be located and maintained 6 feet from the edge of the open excavation. Hard barricades shall be made of a substantial material and will not be affected by wind, rain, heat, cold or other severe weather conditions. Placement of hard barricades will be installed on an ongoing basis throughout the shift and as work progresses, and **MUST** be completed by the end of each shift. New excavations shall not be started prior to the previous shifts hard barricade placement completion.

6.22. Structural Alterations

- 6.22.1. Modifications to any of the building foundations are NOT permitted without approval from the Central Facilities Engineering Department.
- 6.22.2. Core drilling throughout slabs on grade, elevated slabs, walls, columns, beams, dintless or any other concrete / masonry structure modifications are NOT allowed without approval from the Central Facilities Engineering Department.
- 6.22.3. Building steel structure modifications are NOT permitted to the primary and secondary structural steel members: building columns, wind column, beams, crane girders, upper and bottom box trusses steel members, roofing structure components, wall steel framing, wall girts, bracing systems, belt truss framing, single / double man door framing, overhead door framing, and conveyors steel framing, bay piping, duct-work and cable trays support(s).
- 6.22.4. NO drilling and/or welding modifications are allowed on the above mentioned structural steel members. When mechanical attachments are intended to be used on building structural steel, approval from the Central Facilities Engineering Department is required.
- 6.22.5. NO additional equipment shall be mounted at the upper/ bottom structural steel roof trusses.
- 6.22.6. NO additional loading at roof building (s) are allowed due to temporary or permanent staging materials and / or equipment.
- 6.22.7. NO modifications to the crane runaway girder(s) and supporting framework are allowed. When mechanical attachments are intent to be used, Central Facilities Engineering Department approval is required.
- 6.22.8. NO modifications to the following are allowed: slab on grade grating, checkered plates, mill floor pit (s) steel plates, mill floor openings steel cover plates, hydraulic and electric trenches grating and cover plates.
- 6.22.9. Modifications to the building(s), miscellaneous equipment metals or equipment components are NOT permitted without prior Central Facilities Engineering Department approval including: stairs, stair towers, ladders, gates, swing gates, platforms, columns, bracing, grading, and handrail, mid-rail and toe plates, life-lines systems at roof, crane runways and floors elevations.
- 6.22.10. NO modifications to building(s) windows, siding or walls are permitted without Central Facilities Engineering Department approval. When a new opening is required at building siding, contractors shall submit a design and method to provide a watertight seal around the new opening penetration to the Central Facilities Engineering Department for approval.
- 6.22.11. Modification to building(s) roof system, flashing, counter-flashing, decking are NOT allowed without prior Central Facilities Engineering Department approval.

6.23. Fall Protection and Prevention

- 6.23.1. Contractors must comply with the most stringent requirements specified in 29 CFR 1926 Subpart M, 29 CFR 1910 Subpart D and enforce the proper use of fall protection equipment wherever it is required.
- 6.23.2. Personal Fall Protection (PFP) equipment and 100% tie off is required when exposure to a free fall hazard is not prevented by the use of permanent or temporary guarded scaffolds or platforms at a height of four (4) feet or higher or wherever there is a potential hazard of an employee falling into dangerous equipment, regardless of the height.
- 6.23.3. The only exception to the four foot fall protection rule is for personnel on flat-bed trailers. Contractors must minimize the amount of time required to stand on flatbed trailers.
NOTE: All personnel shall disembark from the trailer before a load is moved.
- 6.23.4. Mandatory use of retractable lanyards is required between heights of 4' and 18'. For heights over 18', standard full body harnesses and any shock absorbent lanyards may be utilized.
- 6.23.5. Be sure to secure lanyards close to the body when not in use to prevent them from catching on objects or structures or becoming entangled in rotating equipment.
- 6.23.6. A competent person is to inspect the personal fall arrest systems at least monthly and color code each piece of equipment in accordance with section 6.14 of this manual.
- 6.23.7. Chafing pads or abrasion resistant straps must be used around sharp edged structures to prevent cutting action against safety lanyards or lifelines.
- 6.23.8. Where practical, contractors should tie off directly overhead to avoid swing fall hazards.
- 6.23.9. The design and installation of horizontal lifelines must be under the supervision of the contractor's qualified person.
- 6.23.10. Contractor Employees are strictly prohibited from using the following structures as anchor points: guardrail systems, conduit, sprinkler pipes, cable trays, moving equipment and any process piping containing hazardous contents.
- 6.23.11. Fixed Ladders:
- 6.23.11.1. Before climbing a fixed ladder, contractors must visually and manually inspect the fixed ladder for damage or defects, including, but not limited to, the following:
- Broken rungs
 - Bent rungs
 - Loose rungs
 - Lack of sturdy side handrails
 - Instability of the fixed ladder
 - Substance such as greases, oil or dirt on the fixed ladder

- Obstructions

- 6.23.11.2. If a Contractor notes any damage or defect to a fixed ladder during the contractor's inspection of the fixed ladder, the contractor must not climb the ladder and must report the damage and/or defect of the fixed ladder to the designated AM/NS Calvert Contractor Coordinator.
- 6.23.11.3. If a Contractor has any safety concerns regarding a fixed ladder, the contractor must not climb the fixed ladder and must report the safety concerns of the fixed ladder to the designated AM/NS Calvert Contractor Coordinator.
- 6.23.11.4. Contractors must face a fixed ladder and maintain a three-point contact at all times while ascending or descending a fixed ladder.
- 6.23.11.5. Three-point contact consists of two feet and one hand or two hands and one foot which is safely supporting the contractor's weight while ascending and descending the fixed ladder. Contractors must have at least three limbs (two feet and a hand, or two hands and a foot) in contact with the fixed ladder at all times.
- 6.23.11.6. Contractors must not carry any materials with them which will prevent them from holding onto a fixed ladder with both hands while ascending and descending a fixed ladder.
- 6.23.11.7. Contractors must never hurry or make sudden movements while ascending or descending a fixed ladder.
- 6.23.11.8. Contractors must only use a fixed ladder one person at a time.
- 6.23.11.9. Contractors must wear slip resistant steel toe or safety toe shoes while ascending or descending a fixed ladder.

6.24. Flammable and Combustible Liquid Storage

- 6.24.1. Contractors shall comply with 29 CFR 1910.106, 29 CFR 1926.153 and NFPA 30.
- 6.24.2. For quantities of 1 gallon or less, or flammable liquid materials which are highly viscous, the original container may be used for storage, use, and handling.
- 6.24.3. Flammable cabinets must be painted with fire-retardant paint.
- 6.24.4. Not more than 60 gallons of flammable or 120 gallons of combustible liquids shall be stored in any one storage cabinet. Not more than three such cabinets may be located in a single storage area. Quantities in excess of this shall be stored in an inside storage room.

- 6.24.5. Gasoline cans must be a closed container, of not more than 5 gallons capacity, having a flash arresting screen, spring closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

6.25. Heat Stress Prevention and Control

- 6.25.1. Contractors will directly notify AM/NS Calvert Fire and Rescue in the event of an employee heat stroke, heat exhaustion, heat cramps or other suspected heat fatigue.
- 6.25.2. For a more complete guideline for how to recognize, control and help prevent heat illnesses, visit OSHA's Occupational Heat Exposure webpage at <https://www.osha.gov/SLTC/heatstress/>.

6.26. Hot Work

- 6.26.1. Contractors shall comply with 29 CFR 1910 Subpart Q, 29 CFR 1910.101-104, 29 CFR 1926 Subpart J and NFPA 51.
- 6.26.2. Before any hot work is performed, a Hot Work Permit must be completed and issued to the contractor.
- 6.26.3. Before the contractor is permitted to use electric, gas or oil-fired heaters and other similar heating equipment, the designated AM/NS Calvert Contractor Coordinator must obtain approval from the plant AM/NS Calvert Contractor Coordinator or AM/NS Calvert Fire & Rescue to use this equipment.
- 6.26.4. A trained and qualified fire watcher must be posted at the job during the hot work and at least 30 minutes after the hot work has been completed.
- 6.26.5. Keep flammable materials 50' away from welding, burning, or other ignition sources. If it is infeasible to store flammable materials 50' away from hot work or other ignition source, flammables must be completely shielded with flame retardant material.
- 6.26.6. Report all fires immediately to AM/NS Calvert Fire & Rescue.
- 6.26.7. While using a cutting torch, wear at all times properly fitted cutting goggles or welding shield with the appropriate lens shade number.
- 6.26.8. Before burning, welding, grinding, or disturbing any painted or preservative (including stainless) coated surface, the contractor shall have it checked for lead, chromium, cadmium, or other toxic substances. Specialized safety procedures and work instructions may be required.
- 6.26.9. Acetylene and oxygen bottles must be stored 25 feet away from each other while not in use.
- 6.26.10. Do not repair damaged gauges, hoses, tips, or torches. These must be immediately tagged and removed from service.

6.26.11. A charged fire extinguisher with up-to-date inspection must be kept on all welding equipment.

6.26.12. Place welding screens around the work area (when practical) to protect others from UV rays and flying particles.

6.27. Line Breaking Procedures

6.27.1. An AM/NS Calvert Line Breaking Permit must be issued prior to performing any line breaking.

6.27.2. All line breaks will require energy control. Therefore, contractors must comply with the Energy Control Lockout/Tryout section of this manual during line break work.

6.27.3. Line breaking / equipment opening permits will expire at the end of the issuer's work shift.

6.27.4. If additional work is necessary beyond this time, a new permit will be required.

6.28. Energy Control Lockout/Tryout

6.28.1. Contractors must inform each other, as well as AM/NS Calvert Team Members, of their respective lockout/tryout procedures which must comply with 29 CFR 1910.147. This exchange of information must occur prior to any construction activity requiring lockout/tryout.

6.28.2. Only lockout on a piece of equipment that has been verified to be isolated at a **ZERO ENERGY STATE** and locked out by a qualified AM/NS Calvert employee. An AM/NS Calvert lock must be the first lock on and last lock off for all lockouts involving contractors.

6.28.3. Contractors can check zero energy isolation by referring to the Energy Control Procedure / Verification Form that will be completed by AM/NS Calvert and made available for all individuals involved in the lockout.

6.28.4. Contractors have the right to request observation of the zero energy state verification process during the lockout.

6.28.5. Contractors can only perform a positive lockout when involved in energy control at AM/NS Calvert and shall not use a tag for isolating energy.

6.28.6. Equipment that cannot be locked out must be reported to AM/NS Calvert Contractor Coordinator or AM/NS Calvert Area Safety Specialist.

6.28.7. Locks shall have only one key which is to be controlled by the person securing the lock and shall be personally identifiable.

6.28.8. The contractor placing the lock on the energy-isolating device/lockbox is responsible for removing the lock.

- 6.28.9. All energy control activities involving potential radioactive energy sources shall be coordinated with the Radiation Safety Officer (RSO) or designated Radiation Worker.
- 6.28.10. When a contractor who places a lock is not available to remove his / her lock(s), the lock(s) may be forcibly removed upon approval of the AM/NS Calvert Area Manager or his / her designee. This exception will only be granted after a reasonable effort is made to assure that contractor is not on the plant site. A reasonable effort consists of attempting to make phone contact, a physical inspection of the work site and a check of the contractor's work schedule. If the person who placed the lock(s) cannot be contacted, he /she will be notified of the action taken prior to resuming any work. The Forcible Lock / Tag Removal Checklist Form shall be followed, documented, and maintained on file at AM/NS Calvert. The AM/NS Calvert Safety Department shall be notified of the removal and receive a copy of the form within 24 hours.

6.29. Personal Protective Equipment, Personal Clothing, Hair & Jewelry

- 6.29.1. Contractors must provide their own personal protective equipment (PPE) that is conducive to the hazards they are exposed to that complies with 29 CFR 1910.133 – 1910.138.
- 6.29.2. Hardhats, safety glasses and steel (or composite material) toe safety shoes are required in all areas of AM/NS Calvert. Metatarsal safety shoes are job specific and are required as identified in the Contractor Work Permit and pre-task preparation.
- 6.29.3. Contractors working inside mill buildings are required to wear long sleeve, 100% cotton shirts at a minimum. Flame Retardant (FR) clothing is required per NFPA 70E as it relates to electrical work performed by contractors and when performing hot work.
- 6.29.4. Safety glasses with dark lenses are permitted, but are not allowed inside buildings or at night.
- 6.29.5. Hearing protection must be provided and worn in all mills and whenever conducting tasks that pose a high noise level.
- 6.29.6. Contractors MUST have long sleeves around cutting, burning, and welding operations, or by site specific requirements. Shirts must be tucked in. Tank tops, muscle shirts, and shorts are strictly prohibited.
- 6.29.7. Jewelry (i.e., rings, metal watches, bracelets, necklaces, etc.) is strictly prohibited to be worn while performing work in all mill areas unless specified otherwise by AM/NS Calvert Safety.
- 6.29.8. Loose fitting or excessively torn clothing is not permitted.
- 6.29.9. Long hair must be tied back, pulled up and/or tucked under hard hats in designated areas.
- 6.29.10. Contractors are prohibited from wearing red hardhats.

- 6.29.11. Do not wear hardhats backwards. Generally, welders are the only personnel allowed to wear hard hats in reverse with an appropriate welding shield attached and if the hard hat is rated to be worn in backwards.

6.30. Personnel Hoisting Procedure

- 6.30.1. The Contractor is responsible for ensuring that all personnel and equipment involved in personnel hoisting activities comply with 29 CFR 1926 Subpart N and ASME B30.2. The use of suspended personnel hoisting platforms is not recommended and should only be used if ALL other methods have been reviewed and determined to be inadequate. The use of suspended work platforms must be approved prior to use by the AM/NS Calvert Crane Team and require a critical lift plan.

6.31. Power and Hand Tools

- 6.31.1. Contractors shall comply with 29 CFR 1910 Subpart P.
- 6.31.2. Color code inspected tools according to section 6.2.14 of this manual.
- 6.31.3. Do not leave tools unattended on ladders, scaffolds, or overhead work locations.
- 6.31.4. Do not drop tools to a lower elevation or throw them to another location or person.
- 6.31.5. All electrical powered hand tools shall not be capable of being locked in the on / energized position.
- 6.31.6. All fuel powered tools used inside buildings or enclosures require special consideration regarding ventilation, refueling, noise generation, etc.
- 6.31.7. Interlocking devices shall be in working order and never defeated or bypassed.
- 6.31.8. The use of powder- actuated tools is prohibited unless otherwise approved by the AM/NS Calvert Contractor Work Permitting Process.
- 6.31.9. If the manufacturer's specification tag affixed to the power tool is not legible, then it shall be taken out of service and not used.

6.32. Powered Aerial Work Platforms

- 6.32.1. Contractors must comply with manufacturer's recommendations and state and federal inspection requirements and regulations, 29 CFR 1910 Subpart F, 29 CFR 1926.453 and applicable ANSI standards.
- 6.32.2. Powered aerial work platforms being utilized near electrical distribution or transmission lines must comply with standards set forth in 29 CFR 1926.550.
- 6.32.3. Body harnesses must be worn by Contractor Employees at all times when working from the basket with the lanyard attached to an equipment manufacturer's designated tie-off point on the basket. Under no circumstances shall the lanyard be attached to a pole, structure or other equipment.

- 6.32.4. Tampering with controls and/or bypass safety devices is strictly prohibited.
- 6.32.5. Mobile and self-propelled lifts/platforms must be used only on level ground and activities in “extreme” weather conditions shall be avoided. Extended boom aerial work platforms shall not be exposed to wind loading greater than the equipment manufacturer’s specified capacity. Activities from aerial lifts or work platforms in outside areas are prohibited during electrical storms.
- 6.32.6. When a situation arises in which there are no other practical means of accessing another level except with the use of an aerial lift and the contractor is required to leave the aerial lift to access the work, this is permissible as long as the contractor can:
 - 6.32.6.1. Connect his/her lanyard to an approved anchorage point before disconnecting from the aerial lift
 - 6.32.6.2. The aerial lift gate is utilized to access the work surface the contractor is transitioning to (i.e. Contractor is not climbing over lift platform rails to access new work surface).

6.33. Radiation Safety

- 6.33.1. The Contractors are responsible for being properly licensed in accordance with Nuclear Regulatory Commission (NRC), state and local radiation regulations.
- 6.33.2. The Contractors shall provide a written radiation safety plan to the AM/NS Calvert Radiation Safety Officer Team detailing the handling, use, transport, and storage of the licensed materials and all training requirements of their personnel. The Radiation Safety Plan will provide 24-hour contact information for the Contractor’s Safety representative. The contractor shall notify AM/NS Calvert Radiation Safety Officer 24 hours prior to the use of any radioactive material.
- 6.33.3. Radiographers MUST:
 - 6.33.3.1. Complete and submit an Industrial Radiographic Permit in conjunction with the facility RSO.
 - 6.33.3.2. Hold a valid U.S.NRC or ADPH License
 - 6.33.3.3. Establish a “controlled area” using three-(3) inch wide barrier tape in the standard radiation warning colors. This “controlled area” must be visually controlled at all times. If there are areas where a person can possibly enter the “controlled area” unnoticed, additional persons must be posted to prevent entrance.
 - 6.33.3.4. Immediately inform the RSO by calling 251-289-3210 or 251-269-3451 or AM/NS Calvert Fire & Rescue, 251-289-4911 to report a fire, explosion or other emergency involving radiation.

6.34. Railroad Safety

- 6.34.1. Contractors shall develop a written formal “On-Track” safety plan in accordance with Federal Railroad Administration (FRA) requirements (49 CFR 214, 218) when it is expected work will be performed within 10 feet of track sidings. The plan must be formally reviewed and approved by AM/NS Calvert Logistics and Central Facilities representatives prior to commencement of any AM/NS Calvert worksite activities. The “On-Track” safety plan at a minimum shall address the following:
- 6.34.2. Formal designation of contractors “Employee-in-Charge” (EIC), who will conduct mandatory job (work group) pre-briefings
- 6.34.3. Work activities conducted adjacent to or located physically on railroad systems
- 6.34.4. Procedures to be followed for notifying railroad officials of work locations, work group size, track obstructions and affected start and stop times
- 6.34.5. On-track protection procedures to be implemented (i.e., flagmen, alerting systems), limits of work area, emergency response actions (e.g., telephones), medical equipment, fire/rescue plan and access locations, derailling devices/locations, etc.
- 6.34.6. Minimum PPE requirements e.g., hard hat, safety glasses (with fixed side shields), reflective vest (orange), steel toed work boots, trousers (full length), and sleeved type shirt. Tank top, sleeveless and half type shirts shall not be authorized.
- 6.34.7. Whenever Contractors are engaged in work site activities on/or within 10 feet of railroad track sidings, blue flags shall be displayed in the center of the railroad track sidings at least 150 feet from the work area (one in each direction). The proper railroad switching companies must be notified of the area where the work is to be performed.
- 6.34.8. Whenever Contractors are operating mobile equipment (cranes, backhoes, etc.) on/or within 10 feet of railroad track sidings, derailleurs must be positioned on the railroad track sidings 150 feet from the work area (one in each direction), in addition to blue flags. Portable derailleurs must be controlled by proper energy control (lockout tryout) procedures and use must be approved by AM/NS Calvert Logistics. Derailleurs must first be isolated and controlled by AM/NS Calvert prior to lockout.
- 6.34.9. Contractors performing work other than routine inspections on railroad tracks must lockout on a derailer first isolated and controlled by AM/NS Calvert.
- 6.34.10. Contractors performing routine inspections must have a written work instruction and hazard assessment completed that includes the use of alternative protective means (i.e. flagman).
- 6.34.11. Contractors must verify with Logistics if a railroad closure permit is required prior to work.

6.35. Reinforcing Steel

- 6.35.1. Contractors must comply with 29 CFR 1926.107(b). For additional guidance on how to comply, see OSHA's e-tool at:
https://www.osha.gov/SLTC/etools/construction/falls/protruding_rebars.html.

- 6.35.2. Contractors must also provide reinforcing mats (used as a walkway) with planking to ensure safe footing. A two-part sling shall be used when moving bundles of rebar over 20 feet in length by crane. Wire mesh rolls shall be secured at each end to prevent recoiling action. Reinforcing steel (rebar) for walls, piers, columns, and similar vertical structures shall be guyed and supported to prevent collapse.

6.36. Silica

- 6.36.1. Contractors shall consult the specific silica-generating material MSDS (SDS) for hazards, first aid measures and controls.
- 6.36.2. Unless otherwise specified by the materials' MSDS (SDS), the following requirements must be met and communicated by the contractor to affected contractor employees:
- 6.36.2.1. **Wear Loose Clothing:** Clothing made of 100% cotton, loose at the neck and wrist, as well as head covering and gloves protect skin areas from silica and helps prevent silica from rubbing into the skin. High-efficiency particulate air vacuum systems shall be available so that all individuals in direct contact with silica can vacuum their work clothes before leaving the project.
- 6.36.2.2. **Protective Clothing:** Whenever silica exposures are expected to exceed $50 \mu\text{g}/\text{m}^3$, or where there is substantial direct contact with an individual's work clothes, disposable coveralls complete with head and foot covering shall be provided by the contractor to limit exposure. For applications involving molten metal, FR-8 coveralls shall be worn. Do not wear this clothing home.
- 6.36.2.3. **Prevent Dust:** Avoid creating dust. Use wet methods and HEPA filtered vacuums for cleaning. Compressed air or dry sweeping must not be used. Silica and "after-service" SILICA shall be handled non-aggressively to minimize exposure. In addition, work practices and emergency controls shall be implemented. This is particularly important while sawing, spraying, or removing "after-service" silica because exposures can be quite high.
- 6.36.2.4. **Protect Eyes:** Eye protection will be used when working with silica materials or in areas where loose fiber particles may get into the eyes.
- 6.36.2.5. **Do Not Rub or Scratch Skin:** If silica particles and fibers accumulate on exposed skin areas, do not rub or scratch. Remove the material by washing the skin thoroughly but gently with warm water and mild soap. The use of a good commercial skin cream or lotion after washing may be helpful.
- 6.36.2.6. **Wear Respirators:** Respiratory protection and fit testing are mandatory for exposures more than $50 \mu\text{g}/\text{m}^3$, 8-hour TWA or when the contractor does not have reliable air monitoring data to justify otherwise. However, respiratory protection is recommended for lower levels of exposure because of possible short-term excursions. Half-faced, air purifying respirators equipped with a NIOSH certified P100 particulate filter will be used as a minimum. A full faced, air purifying respirator equipped with a P100 filter or PAPR with P100 filters is recommended (provides eye protection with the respirator).

6.36.2.7. Disposal Requirements: Capture silica-generating material in a manner that prevents airborne dispersion prior to disposing. For example, wetting down the material and/or storing in a closed, sealed container. Contact the AM/NS Calvert Environmental Team prior to disposing.

6.36.3. To follow these requirements, knowledge of airborne silica exposures is necessary. A trained contractor employee shall conduct the required industrial hygiene monitoring. When industrial hygiene monitoring is not feasible, the use of respirators consistent with the highest levels that might reasonably be generated shall be required. Historical data must be provided by the contractor prior to start of work.

NOTE: Silica that has been in service at elevated temperatures (greater than 1,800 Fahrenheit) undergoes partial conversion into cristobalite, a form of crystalline silica that can cause respiratory disease (silicosis). Only the fiber closest to the hot surface will have detectable cristobalite content. The crystalline silica-containing fibers will be more friable and therefore may generate a larger amount of dust when removed from a high-temperature application. For these reasons, particular care shall be taken during Silica removal to minimize dust generation. Proper dust suppression methods are necessary. In addition, contractor employees shall use a respirator approved for protection against pneumoconiosis-producing dusts when removing “after-service” Silica.

6.37. Respiratory Protection

6.37.1. Contractors shall provide respiratory protection to protect employees from respiratory hazards that complies with the OSHA Respiratory Protection Standard in 29 CFR 1910.134, 1926.103, and 1926.58. Respirators shall be used only after evaluation of the work process; the exposure; and alternative control measures, such as dilute or exhaust ventilation, wet methods, airless spray, and substitute products have been considered.

6.38. Rigging

- 6.38.1. Contractors are responsible for complying with OSHA and ANSI/ASME standards associated with rigging practices. Contractors may contact AM/NS Calvert Lead Safety Specialist of Central Facilities and/or the AM/NS Calvert Crane Team for any required information about these rules.
- 6.38.2. Contractor foremen, general foremen, and rigging supervisors must complete qualified rigging training that meets OSHA and ANSI standards depending upon the type of rigging performed during the job. Records of the training must be maintained by the contractor and available upon request.
- 6.38.3. Rigging equipment must be inspected, identified, maintained and marked by the manufacturer in accordance with ANSI/ASME B30.9,10,26; 29 CFR 1926.501 and 29 CFR 1910.184. Inspections must be documented, available for review and comply with the monthly color coding requirements.
- 6.38.4. A sorting spreader or hoisting spreader must not be used to choke or cradle a load. When hoisting with cable spreaders, hooks must be secure before the lift. All loads must

be checked for loose material that might fall out if the load is fouled or jarred. To avoid swinging, the block must be centered over load before hoisting.

- 6.38.5. Loads must be lifted a few inches and checked for balance and security.
- 6.38.6. Lifting or hoisting at a load angle of less than 45 degrees is not permitted.
- 6.38.7. Softeners must be used on sharp edges of loads to minimize the danger of fall-out when slings are released. Softeners must be secured to the load.
- 6.38.8. No one will be allowed to a cross barricaded area without permission of the rigging supervisor or the person in charge.
- 6.38.9. Rigging and loads must not foul or saw against lines, straps, blocks, or other equipment.
- 6.38.10. Rigging shall not be stored on the ground when not in use or in a manner that may cause damage to the rigging.
- 6.38.11. Equipment being erected shall be raised using the hoisting lugs, trunnions, or supplier-specified hoisting points on the equipment and be positioned on its foundation to the correct elevation, plumpness, and centerlines as shown on the drawings.
- 6.38.12. Tag lines of sufficient length to control the load shall be attached to all loads in a manner that provides a method of control while the load is in the air or being moved into place. Multiple tag lines may be required. If used, they shall be of adequate length to suit the circumstances of the lift.
- 6.38.13. Steel pipe and beams subject to upending shall not be rigged in a basket type hitch during installation.
- 6.38.14. Shackles and Hooks:
 - 6.38.14.1. Shackles must be used, tested, maintained and inspected in accordance with ANSI/ASME B30.26. Hooks must be used, tested, maintained and inspected in accordance with ANSI/ASME B30.10.
 - 6.38.14.2. Shackles shall be used in sling eyes to secure load on hooks when more than two slings are used.
- 6.38.15. Slings:
 - 6.38.15.1. Slings must be inspected, identified, and marked by the qualified manufacturer in accordance with ANSI/ASME B30.9.
 - 6.38.15.2. Standard color coding specified in this manual must be used to demonstrate monthly inspections.
 - 6.38.15.3. Wire-rope clips must not be used to fabricate eyes in slings.

- 6.38.15.4. The maximum, included, horizontal angle in a choke hitch or of a leg of a bridle must be 60 degrees.
- 6.38.15.5. Slings, with shackles, must be attached to the hoisting lugs or trunnions on the equipment and to the load-block hook. The eyes of the slings must be placed in appropriately sized shackles and placed on the load-block hook.
- 6.38.15.6. Slings must not be shortened with knots or bolts or other makeshift devices.

6.39. Scaffolding

- 6.39.1. Contractors must comply with 29 CFR 1910.28, 29 CFR 1926.451.
- 6.39.2. Scaffolds, in excess of 4 feet above the ground, must have top rails, intermediate rails, and toe boards on all open sides.
- 6.39.3. Scaffold lumber shall not be used for other purposes. The ends of the planks may be painted a bright color for easy identification, and the ends can be banded with strap iron bands to prevent splitting.
- 6.39.4. Scaffolds must be inspected prior to each shift when in use and the contractor shall abide by the scaffold erector's tag instructions.

6.40. Barricades and Floor/Wall Openings

- 6.40.1. Barricades are required around excavations, holes, or openings in floors, edges of roofs, and elevated platforms, around certain types of overhead work, and around hazardous work such as chemical or steam leaks or slippery floor areas
- 6.40.2. Open holes are to be covered using materials that will withstand the intended loads, secured against movement, and labeled "HOLE" or "COVER" or hard barricaded that meets OSHA standards for hand railing.
- 6.40.3. Yellow caution tape is to be used when entry is allowed as long as precautions are followed.
- 6.40.4. Red barricade tape is to be used in situations in which entry into the area is prohibited and requires special authorization.
- 6.40.5. Yellow caution tape with magenta lettering and radiation symbol is used for any job that could involve radiation exposure. Contractors are not allowed to cross this barricade under any circumstances unless specifically qualified.
- 6.40.6. For all barricade types, there shall be a tag attached on all sides of the barricade that: states the hazard, contractor company name, contact person's name/phone number and date.
- 6.40.7. Barricades and tags will be supplied by the contractor.
- 6.40.8. Barricades shall be installed around all sides of the hazard with tags on each side.

6.40.9. Those erecting the barricade, barricade tape / ribbon or safety (snow) fence shall perform the following:

- 6.40.9.1. Prior to erecting barricade notify any affected personnel and obtain authorization from the Shift Coordinator.
- 6.40.9.2. Prior to erecting a barricade for vehicular routes, notify Facilities/Utilities Team Manager.
- 6.40.9.3. Buildings walls, chain link fences, and other similar “fixed” objects with a height/strength equal to or greater than a protective barricade may be used in place of a portion of a protective or warning barricade. Once the barricade has been erected, work can begin, provided required permits have been obtained.
- 6.40.9.4. Make sufficient inspections prior to and during work, to ensure that the barricade is properly maintained (including legibility of signs) and is fully intact.
- 6.40.9.5. Prior to erecting barricade notify any affected personnel and obtain authorization from the Shift Coordinator.
- 6.40.9.6. Prior to erecting a barricade for vehicular routes, notify Facilities/Utilities Team Manager.
- 6.40.9.7. Buildings walls, chain link fences, and other similar “fixed” objects with a height/strength equal to or greater than a protective barricade may be used in place of a portion of a protective or warning barricade. Once the barricade has been erected, work can begin, provided required permits have been obtained.
- 6.40.9.8. Make sufficient inspections prior to and during work, to ensure that the barricade is properly maintained (including legibility of signs) and is fully intact.

6.41. Traffic and Pedestrian Protection

- 6.41.1. All traffic signs or devices used for protection of the public shall conform to ANSI D6.1, Manual of Uniform Traffic Control Devices for Streets and Highways.
- 6.41.2. All contractors must adhere to applicable speed limit signs posted on the site and yield to pedestrians.
- 6.41.3. Barricades, cones, and/or similar protective devices shall be used whenever contractor employees or the public are exposed to traffic or similar hazards.
- 6.41.4. When traffic patterns are closed or altered due to work activity, instructional/warning signs or flaggers shall be used.
- 6.41.5. Contractor employees working adjacent to traffic shall wear a reflective vest.

- 6.41.6. Whenever and wherever possible or necessary, low-voltage (12-volt) protected lights shall be used to mark fences and barricades and other such encroachments onto streets or sidewalks. These lights shall be kept operational.
- 6.41.7. Facility walkways and roadways shall be kept clean and free of hazards and/or materials at all times. Whenever sidewalks or other normal pathways for pedestrians are blocked off due to construction activities, protected pedestrian pathways shall be provided around the blocked zone to protect pedestrians from traffic or other hazards.
- 6.41.8. When steel plates, wood planking or similar covers are used on public ways to cover excavations, they shall be substantially secured to prevent movement from traffic. When such covers are located where there is pedestrian traffic or exposure, they shall be tapered on all sides with cut-back, cold mix or similar material to eliminate tripping hazards. Covers shall be non-slip in nature or have a non-slip surface.
- 6.41.9. When work is to be performed over or very near to roadways, walkways or other areas used by the public, adequate precautions shall be taken to prevent material from falling on persons or vehicles.
- 6.41.10. When disposal systems from upper floors are used, such chutes and dumpsters shall not be located very close to roadways, walkways or other pedestrian.
- 6.41.11. Material which might be blown or swept off roads or floors shall be properly secured and shall not be staged or stored near roof or floor perimeters.

6.42. Working Over or Near Water/Liquid/Marine Terminal

- 6.42.1. Contractors must comply with 29 CFR 1926.106 and shall wear a US Coast Guard approved life jacket or buoyant vest when:
 - 6.42.1.1. Working above the surface of a body of water/liquid (3 feet or deeper) (bridges).
 - 6.42.1.2. Working on a vessel, boats or barge, etc., in/or around a body of water/liquid (3 feet or deeper).
 - 6.42.1.3. Working 6 feet or closer from the banks/edges of water/liquid (3 feet or deeper).

6.43. Roof Work

- 6.43.1. Contractors are responsible for complying with OSHA standards 29 CFR 1926 subpart L, 1926 Subpart M, and 1926 subpart N for all roof work activities.
- 6.43.2. Contractors must obtain an AM/NS Calvert Roof Access Permit to gain access to roof tops.

6.44. Manual Material Handling Practices

- 6.44.1. Unless the Contractor Safety Coordinator or contact receives a different result from an evaluation tool such as the NIOSH lifting formula on a case-by-case basis, the default unassisted recommended weight limit for manually handling objects is 35 pounds.
- 6.44.2. The following are recommended procedures when handling objects manually:
- 6.44.3. Estimate the weight of an object before attempting to lift it.
- 6.44.4. Get help when handling objects that are too heavy (>35 lb.) or use a mechanical lifting device.
- 6.44.5. Keep the load as close to the body as possible
- 6.44.6. Bend knees and lift the load straight up without jerking, twisting, or slipping
- 6.44.7. Select the best path to carry heavy or awkward loads, carry loads the shortest possible distance, and set loads down using the reverse of the lifting procedure
- 6.44.8. Ensure that your line of vision is clear or directed by a fellow employee.
- 6.44.9. When two or more persons carry one object, each person, if possible, shall face the direction in which the object is carried.

6.45. Site Wide Emergency Action Plan/Lightning Safety

- 6.45.1. Contractors should check the weather forecast before each work shift begins. Potential adverse weather information should be communicated to contractor employees before beginning work activities and as conditions change.
- 6.45.2. Contractors must identify the AM/NS Calvert Emergency Action Plan for the specific location within the site where work is to be performed. In the event of fire, severe weather warnings (tornados), major chemical spills, explosion or other type potential catastrophic event, contractors shall follow this plan.
- 6.45.3. Contractors are responsible for developing their own lightning/severe weather safety plan.
- 6.45.4. Personnel should never use these areas as a means for shelter during inclement weather:
 - 6.45.4.1. Underneath trees
 - 6.45.4.2. Elevated places
 - 6.45.4.3. Open areas
 - 6.45.4.4. Parking lots
 - 6.45.4.5. Tall isolated objects
 - 6.45.4.6. Activities where water is in the vicinity
 - 6.45.4.7. Trenches and excavations
 - 6.45.4.8. Open cab vehicles
 - 6.45.4.9. Unprotected open buildings
 - 6.45.4.10. Conex boxes that are not properly and/or adequately grounded
 - 6.45.4.11. Tent canopies

6.45.4.12. Large structures, such as fences or bleachers

6.46. Gas Hazards

- 6.46.1. Contractor employees working in proximity to area gas hazards or work-generating gas hazards need to be knowledgeable of these hazards and the safe work practices, and be equipped with calibrated detection equipment.
- 6.46.2. Purging will be determined by the facility/department. The contractor must ascertain from the designated AM/NS Calvert Contractor Coordinator whether a pipe line has been or requires purging before beginning work. The Contractor is responsible for monitoring that the purge is maintained for the duration of the work or job. Contractors must receive authorization from the designated AM/NS Calvert Contractor Coordinator to open or close gas valves.
- 6.46.3. Contractors must select and provide appropriate respiratory protection and gas detection equipment for their employees use during the performance of all jobs and work requiring gas detection equipment. Contractors must provide and use only NIOSH certified respiratory protection equipment. Contractor provided detection equipment must be approved for use by the plant before the start of the work.
- 6.46.4. Contractor supervision must be knowledgeable of the safe use procedures and limitations of the respiratory protection and gas detection equipment provided and ensures that equipment use is in accordance with all recommended procedures and operating instructions.
- 6.46.5. Contractors must select for work requiring use of respiratory protection and gas detection equipment only employees currently evaluated and trained in the safe use of this equipment. Contractor employees need to know how to use the detection equipment provided, how to monitor the work site, how to respond to an alarm condition, who to inform of the alarm condition and when they may resume work.
- 6.46.6. Contractors must have written certification from a physician or other licensed health care professional that employees required to wear respiratory protection equipment have been medically evaluated and are capable of using such equipment without medical restrictions. Certification must be obtained by the contractor before fit testing and initial training and assignment of the employee to work requiring respiratory protection and at least annually thereafter, unless circumstances require more frequent certification.
- 6.46.7. Contractor employees, before beginning work in known or potential gas hazard areas requiring use of respiratory protection and gas detection equipment, require training on established facility or department safe work practices for working in a known or potential gas hazard area.
- 6.46.8. Contractor employees working in a known or potential gas hazard or oxygen-deficient area are to use gas or oxygen detection equipment. Contractors must ensure that necessary gas checks are conducted and that Contractor employees inform the AM/NS Calvert department supervision before entering and after leaving the area. Contractor

employees are to observe all applicable regulatory requirements for working in a known or potential gas hazard or oxygen deficient area.

- 6.46.9. Only approved explosion-proof electrical equipment and spark-proof tools in flammable vapor/gas areas are permitted.
- 6.46.10. Contractors using internal combustion engine driven equipment inside of enclosed area must vent/pipe engine exhaust outdoors. Contractors are responsible for monitoring and maintaining carbon monoxide levels inside the enclosed area or building below permissible exposure limits.

6.47. Electric Welding

- 6.47.1. Electric welding must be performed only by qualified welders in well-ventilated areas.
- 6.47.2. Contractor welders are to use required personal protective equipment.
- 6.47.3. Contractors must screen or shield welding arc from others in the same area.
- 6.47.4. Contractors must ground welding in a way that individuals or equipment does not become part of the ground circuit. Ground welding must be as close to the welding as possible. Electrical conduit or piping systems containing hazardous materials or gases may not be used as a welding ground.
- 6.47.5. Contractors must ground frames of electric welding machines.

6.48. Compressed Gas Cylinders

- 6.48.1. Contractors must store cylinders erect and secured to a fixed object in well-protected, well-ventilated, dry locations, away from sources of heat (radiators, open flame, molten metal). Contractors must close valves on empty cylinders and replace valve protection caps.
- 6.48.2. Contractors must place cylinders where they cannot be struck by moving equipment; where materials cannot be dropped on them, and where they cannot become part of an electric circuit.
- 6.48.3. Contractors must perform a visual inspection of gas cylinders prior to each use. If deficiencies are found and repair is needed, the contractor must not repair the gas cylinder and must contact the compressed gas manufacturer to collect from the site for repair.
- 6.48.4. Contractors must keep cylinders far enough away from any welding or cutting work activity so sparks, hot slag, or flame will not reach them; provide fire-resistant shields if needed.
- 6.48.5. Contractors must replace valve protection caps; hand tight, on cylinders not connected for use. Regulators must not be connected on any cylinders during transit in a motorized or powered vehicle.

- 6.48.6. Contractors must separate oxygen cylinders in storage from fuel-gas cylinders or combustible materials (especially oil or grease), by a minimum distance of twenty (20) feet or by a non-combustible barrier at least five (5) feet high having a fire resistance rating of at least one-half hour.
- 6.48.7. Contractors must ensure that compressed gas cylinders are legibly marked to identify content, by either the chemical or the trade name.
- 6.48.8. Contractors must secure compressed gas cylinders by adequate means (chain, metal stands, etc.).
- 6.48.9. Contractors must move cylinders in a pushcart designed to firmly secure the cylinders to the cart in an upright position and the valves must be protected.
- 6.48.10. Contractors must secure cylinders on a cradle, sling board or special pallet for hoisting. Remove regulators and replace valve protection caps. Contractors must not use valve protection caps for lifting cylinders. Choker slings or electro-magnets are not to be used to transport cylinders.
- 6.48.11. Where a special wrench is required it must be left in position on the stem of the valve while the cylinder is in use. Contractors must not use cylinders as rollers or work supports.
- 6.48.12. Contractors must avoid handling oxygen cylinders or apparatus with oily hands, gloves, rags, or tools.
- 6.48.13. Contractors must secure cylinders transported by a powered vehicle in an upright position.

6.49. Lasers

- 6.49.1. Use of lasers sources are governed by all applicable federal, state and local regulations.
- 6.49.2. Contractor use of lasers requires approval of an area Lead Safety Specialist.

6.50. Trailers

- 6.50.1. Contractors are to comply with following:
 - 6.50.1.1. Trailer sites are assigned by the designated AM/NS Calvert Contractor Coordinator
 - 6.50.1.2. Contractors are to post trailer fronts with their name and telephone number.
 - 6.50.1.3. Trailers must be positioned so fire hydrants or other emergency installations, such as sprinkler shutoffs, fire standpipe connections, electrical switches, gas valves, etc., are not blocked and remain readily accessible at all times.
 - 6.50.1.4. Trailers must be position so that emergency equipment has access.

- 6.50.1.5. Trailers must not be positioned inside buildings, or close to any gas line, electrical line, tower or other utility to avoid creating a fire exposure or emergency access problem.
- 6.50.1.6. Trailers must not be positioned in a way that they could cause an exposure problem to any ArcelorMittal USA structure.
- 6.50.1.7. Position trailers at least five feet apart, except trailers set contiguously to form a larger complex.
- 6.50.1.8. Position trailers at least ten feet from any flammable/combustible liquid storage tank/area or dispensing facility.
- 6.50.1.9. Contractors must provide and maintain at least one portable fire extinguisher in each trailer at a highly visible, inside location.
- 6.50.1.10. Trailers used as offices, lunch rooms or change rooms must meet all applicable NFPA and OSHA life safety regulations, including two identified unobstructed exits, adequate wiring, etc.
- 6.50.1.11. Contractors must post emergency telephone numbers at all telephones

6.51. Demolition

- 6.51.1. Prior to the start of demolition, a competent person shall make a safety review of the structure to determine the condition and the possibility of unplanned collapse of any portion of the structure.
- 6.51.2. A pre-job review meeting must be conducted between the AM/NS Calvert Contractor Coordinator and the demolition company representative(s) to discuss the requirements of the work and the detailed demolition plan.
- 6.51.3. For large demolition projects, a dedicated safety person (competent in demolition safety) shall be employed by the demolition contractor to oversee the safe operation of the job and ensure that all appropriate rules and work practices are followed.
- 6.51.4. The demolition contractor and the site must identify safety monitors and establish inspection frequencies for smaller demolition projects.
- 6.51.5. Proper lifting and rigging techniques must be used. No lifts are to be made unless load is completely free.
- 6.51.6. All electric, gas, water, steam and other service lines shall be shut off, capped or otherwise controlled and protected. Live utilities must be identified to prevent inadvertent damage.

- 6.51.7. Mechanical equipment shall not be used on floors or working surfaces unless such floors or working surfaces are of sufficient strength to support the equipment and load.
- 6.51.8. During demolition, continuous inspections by a competent person shall be made as the work progresses to detect hazards resulting from weakened structures.

6.52. Environmental Requirements

- 6.52.1. Contractors shall comply with applicable EPA, ADEM and USDOT regulations and the requirements specified in Annex N of their contract.

7.0 RECORDS:

N/A

8.0 VERSION HISTORY:

VERSION	DATE	ITEM	DESCRIPTION OF CHANGE
1.01	8-31-11	N/A	Initial Release
1.02	4-09-13	3.1.11	Contractor Project EHS Plans are no longer required. Specific safety plans may be required as specified by regulatory requirements and/or as requested by TKS safety.
		4.0	References add: Fall protection Program Doc.# 43 Electrical Safe Work Program Doc.# 3964 Rail Safety Program Doc.# 7646 Railroad Closure Permit Doc. # 7835 Mobile Equipment Doc.# 4211 Roof Access Permit Work Instruction Doc.# 8259 Roof Access Permit Doc.# 8258
		5.3	Revise the first sentence of 5.3.1 as: All Contractors are encouraged to conduct and attend specific safety meetings periodically.
		5.13.1.1	Crane Safety add: 5.13.1.1 Contractor shall provide qualified and experience documentation for all operators before they operate at the work site. Documentation shall include; A. National Commission for the Certification of Crane Operators (NCCCO) or B. Equivalent OSHA Certification supported by curriculum and test C. OSHA 10-Hour Construction Safety Course card D. DOT Physical or physical in accordance with ASME B30.5 E. Cranes to be brought on TKS site must have a copy of that cranes annual inspection that is current to within the last 12 months of the date the crane arrives at the TKS main gate. F. Current crane NDT certification(s) within 30 days of the date the crane arrives at the TKS main gate for each individual hook and block brought on TKS site before putting any picker, crane, truck crane, derrick or crawler to work on TKS site.
		5.18.5	Soil Classification-Types Added: Type A Soil, Type B Soil, Type C Soil, Cohesive Soil, Granular Soil, Submerged Soil, Disturbed Soils
		5.18.4	Added to: a method of protecting employees that include Support Systems, Sloping and Benching, Shield Systems and others that provide the necessary protection
		5.32.1.2	

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		5.32.1.6 5.32.1.7 5.32.1.8 5.41.1.1.1	Changed to wearing PFT when exposure to a fall hazard is not prevented by permanent or temporary guarded scaffolds or platforms 4 feet or greater in height Changed to "Employee-in-Charge" Changed Red to White on Blue Changed 50 feet to 150 feet Changed 50 feet to 150 feet Added 5.41.1.1.1 Contact TKS Mill specific Safety Specialist to request a Roof Permit (Doc.# 8258) to gain access to roof tops. (W.I. 8259)
1.03	12/05/13	Entire Document	Removed duplicate requirements of state, federal and professional standards in each section. Incorporated site-specific requirements.
		Entire Document	Removed ISNetworkworld requirements/definitions as this is covered in contractual agreement.
		2.0.	Removed TKS-USA responsibilities. Incorporated in internal documentation.
		3.0.	Inserted OSHA Publication 3071 as a reference document for JHA/JSAs, OSHA's Unguarded Protruding Steel Rebar E-Tool as a reference and OSHA's Occupational Heat Exposure webpage as a reference.
		4.0.	Defined Contractor Coordinator, Contractor Project Manager, Critical Lift and IDLH.
		6.0.	Removed specific environmental requirements as this is covered in contractual agreement
		6.1.10.	Inserted contractor requirements to maintain certification records of designated competent persons.
		6.3.6	Added material removal pass requirement.
		6.4.9	Included Drug Testing Requirements for qualified contractors undergoing refresher training.
		6.6.	Combined Pre-Job Meeting requirements with Contractor Work Permit requirements and removed requirement to submit copies of work permit to Accounts Payable Removed specific ladder and lockout/tryout requirements as these are covered elsewhere
		6.6.1.	Included Contractor EHS Representative, TKS-USA Shift Coordinator (as needed) and TKS-USA Contractor Coordinator as part of Work Permit approval process.
		6.6.5.	Updated requirement for permit completion requirements.
		6.7.	Updated Contractor Safety Meeting requirements.
		6.9.	Added NOTE: All inspection/audit results shall be made available to TKS-USA upon request.
		6.9.2.	Deleted weekly auditing of JHAs requirement.
		6.10.2.	Changed requirement of initial report submittal within 2 hours to a goal of 2 hours.
		6.10.3	Replaced "shall" with "should" in relation to the some complex investigations may take more time.
		6.10.5	Inserted Accident/Incident Category details to match risk matrix.
		6.10.6.1.	Revised contractor notification of fatalities and catastrophes.
		6.11.2.	Inserted Global Harmonization System (GHS) requirements
		6.11.3.	Inserted requirement that contractors must submit a New Sample Chemical Request Approval Form for any new chemicals/products brought onsite.
		6.11.4.	Inserted HAZCOM requirement for contractors to furnish an inventory of all chemicals brought onto TKS-USA property.
		6.16.	Combined Crane Safety with Crane Interference section.
		6.16.7.	Clarified NDT inspection requirements if the crane is removed from the site.
		6.16.20.-21.	Updated crane interference flagging requirements to match barricade policy updates.
		6.18.7.	Corrected insulated high voltage cable notification personnel to reflect current and

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			appropriate practice.
		6.21.9.	Changed requirement from Professional Engineer approval for excavation protective systems from 20 ft. to 10 ft.
		6.22.	Added Structural Alterations section
		6.24.5.	Added gasoline can construction requirements.
		6.26.3.	Changed Fire Watch requirement from 1 hour to 30 minutes after hot work is complete.
		6.28.4.	Included Contractor's right to witness energy isolation during lock out.
		6.40.	Removed hard barricade plan requirement.
		6.38.3.	Included monthly inspection color coding requirement for rigging equipment.
		6.40.2.	Included hard barricade requirement for holes.
		6.40.5.	Included procedures to follow for radiation barricades and changed "purple" to "magenta".
		6.40.9.	Included barricade procedures as updated in barricade policy.
		6.45.	Added lightning safety requirements.
1.04	06/05/14	6.45.8.	Added responsibility of contractors developing their own lightning safety program.
		1.0.	Removed duplication of contract obligations from Purpose
		3.0.	Included definitions of flammable and combustible liquids,
		4.0.	Included additional references found in document
		6.1.11.	Provided reference to general site phone number
		6.19.	Added disposal considerations for lead materials.
1.05	06/16/15	2.0	Added training record requirements
		3.0	Added ASME references Added Hot Work definition
		6.1.10	Added explosives prohibition
		6.1.12	Added notification requirement prior to using utilities
		6.10.2	Added requirement for injured contractors to first be evaluated by AM/NS Calvert Fire & Rescue
			Removed categories of incident types since classification will not be used going forward Revised notification requirement for hospitalizations to match OSHA's requirement
		6.10.5	
		6.15.9	Added minimum clearance distance for hydrants
		6.16.11	Added requirements for critical lifts
		6.16.20-24	Edited Crane Interference requirements to match AM/NS Calvert Program
		6.16.26-27	Added Mobile Crane requirements per request from Crane Team
		6.16.28	Added Overhead Crane requirements per request from Crane Team
		6.20.15	Added cellular phone requirements
		6.21.13	Added barricade requirements for excavations
		6.23.2	Edited fall protection requirements
		6.23.9	Added design and installation requirements for horizontal lifelines
		6.23.11	Added Fixed Ladder section
		6.46	Added Gas Hazards section
		6.47	Added Electric Welding Section
		6.48	Added Compressed Gas Cylinder Section
		6.49	Added Laser Section
		6.50	Added Trailer section
		6.51	Added Demolition section
1.06	05/09/16	6.29.2.	Updated safety shoe requirements
		6.32.6.	Added transitioning requirements for aerial lift activities