EH&S CONTRACTOR SPECIFICATIONS AND REQUIREMENTS

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REVISION HISTORY

Version	Release date	Description
10.0	December 12, 2025	Updated to new template. Removed duplication. Aligned with the *Incident Management Standard* (ALS-2009), *Personal Protective Equipment Standard* (ALS-683) and *Cutting Tools Standard* (ALS-2015). Updated Contractor Environmental Requirements.
10.1	May 14, 2026	Removed old limits of approach/minimum approach distance information and directed to newly released *Limits of Approach Standard* (ALS-2099)

1. SCOPE AND OBJECTIVE

The specifications and requirements in this document are to be effectively integrated into contractors' safety and environment management system and plans.

Contractors must actively promote safe working performance and must implement and participate in activities to provide safe working environments.

The requirements are not intended to be an all-inclusive or definitive set of rules to meet all situations; they are the minimum acceptable levels of performance that must be adhered to by contractors and their subcontractors. Where there is conflict between regulations, Codes, AltaLink standards, project specifications, or best practices, the most stringent shall apply.

Throughout this document, the *Alberta Occupational Health and Safety Act* or *Code* shall be referred to as the *Alberta OH&S Act* or *Code*.

2. DISTRIBUTION OF INFORMATION

AltaLink has a website available to contractors that contains the specifications and requirements for contractors and the various AltaLink standards that must be followed. The site also contains internal AltaLink standards, which contractors can use as reference documents to develop their own standards.

All safety and environment documents that are referenced in this document can be downloaded from the Contractor Safety Site. In section *16.1 Related documents and government regulations*, there is a table listing all safety and environment documents that are referenced in this document.

AltaLink's safety initiatives include distributing safety bulletins and incident alerts for any Class 2 and 3 incidents that have occurred on our sites. These bulletins and alerts must be reviewed and discussed with workers to raise awareness of safe work practices that could prevent similar incidents. Contractors are responsible for forwarding these safety bulletins and incident alerts to their sub-contractors who are working on AltaLink sites. These bulletins and alerts are also found on the Contractor Safety Site.

To obtain access to the Contractor Safety Site, send a request to healthandsafetyadministrator@altalink.ca.

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3. CONTRACTOR REQUIREMENTS

3.1. AltaLink Corporate Health and Safety Policy

Contractors must comply with the *AltaLink Corporate Health and Safety Policy*, which establishes the values and principles that guide AltaLink's commitment to employees, contractors, customers, and the public.

All contractors must be knowledgeable about the policy and be responsible and accountable for understanding and incorporating health and safety requirements into their daily work activities. The policy is available on the Contractor Safety Site.

3.2. Acts, regulations, laws and codes

Contractors must meet or exceed all applicable federal, provincial and local laws or regulations when performing and executing services.

Contractors must inform AltaLink of when they apply for or are granted an exemption to any act, regulation or safety code. All relevant information must be submitted to AltaLink for review and approval.

3.3. Contractor EHS management

AltaLink contractors complete new project construction, repairs, replacements, and upgrades to the existing facilities. AltaLink works closely with contractors to ensure successful safety performance.

A process exists to foster a strong safety relationship between AltaLink and contractors, which includes:

- Selection and qualification
- Expectation setting
- Pre-work planning
- Oversight during work execution
- Feedback/communication during and after the work

All contractors performing work for AltaLink must be qualified through the procurement department using a two-tiered approach.

Contractors are required to subscribe to ComplyWorks. As the owner, AltaLink can access contractor information through the ComplyWorks system.

It is AltaLink's expectation that contractors maintain information to ensure their status is current and ensure the following are maintained:

- Insurance requirements
- Workers' Compensation requirements
- Performance statistics
- Environment, Health and Safety Management Program

Helicopter contractors have additional prequalification requirements for ComplyWorks. The prequalification requirements are found in section 10.6.1.

3.4. Alcohol, drugs and substance abuse

Contractors must have an alcohol and drug policy in place and effectively implemented for workers under their employment while performing AltaLink work. Refer to AltaLink's *Alcohol and Drug Standard for Contractors* (ALS-2026).

3.5. Life Saving Rules

The Life Saving Rules address AltaLink's top hazards that workers face. These rules are the foundations for our safe work practices. Due to the high degree of hazard posed, they must be followed without exception.

Contractors must follow *Life Saving Rules* (ALS-2050). Non-compliance with the Life Saving Rules, pending investigation outcome, may result in disciplinary action up to, and including, permanent removal from site.

3.6. Workers' right to refuse dangerous work

Contractors are required to follow the steps in the *Alberta OH&S Act* for work refusals. Workers have a right to refuse work that creates an "undue hazard" at the worksite. An "undue hazard" is a hazard that poses a serious and immediate threat to the health and safety of a person.

If a worker believes on reasonable grounds that there is an undue hazard at the worksite, or the work constitutes an undue hazard to the worker's health and safety or the health and safety of another worker or person, they may refuse to work or to complete a particular task. The work refusal must be reported to their employer, supervisor or person designated by the employer.

On AltaLink sites, workers are not permitted to perform work tasks they are not adequately trained for.

3.7. Respect in the workplace

AltaLink is committed to providing a work environment in which all individuals are treated with respect and dignity. Every person has the right to work in an environment that is safe, healthy, and free from harassment, violence, and discriminatory practices.

This applies to all AltaLink employees and individuals from outside the company that have interactions with AltaLink employees, including contractors, suppliers, consultants, clients, and business partners. If a complaint is received against contractor, AltaLink will contact their employer immediately.

3.8. Smoking and vaping

Contractors must comply with the *Tobacco Reduction Act*. As a minimum, contractors are required to:

- Designate a smoking/vaping area
- Provide receptacles for safe disposal
- Post signage

3.9. Workplace Hazardous Materials Information System (WHMIS)

Contractors are required to comply with the requirements of *Alberta OH&S* Code Part 29 for any hazardous materials. If a product is used, stored, or handled on a worksite, the prime contractor (or contractor responsible for the worksite if there is no prime contractor)must ensure that the:

- Controlled product is labelled
- Most current safety data sheet (SDS) is readily available to the workers on site
- Worker who works with or is in proximity to the controlled product receives training on the controlled product

3.10. Working alone

Contractors are required to have a program in place for effective communication with workers who are working alone, both during normal and unexpected work situations, as outlined in *Alberta OH&S Code* Part 28. This includes workers required to travel alone to remote locations or where there is no routine interaction with other people.

This communication system can consist of radio communication, landline or cellular communication, or another effective means of electronic communication that includes regular contact with the worker at appropriate intervals. The contractor must perform a hazard assessment and complete written safe work procedures prior to any situation where a worker is working alone.

3.11. Contractor designated health and safety professionals

AltaLink believes that contractor leadership is accountable and responsible for managing the health and safety aspects of the work and for the work performed by the crews. Work leaders, supervisors, or persons-in-charge are accountable for the work and are responsible for the health and safety performance of all workers while in the areas of control.

A health and safety professional is required, as a minimum, when on a per-shift basis there is a total of:

- **1 to 10 contractor employees and/or subcontracted workers on site**: The contractor's highest level of authority on site must be responsible for all health and safety activities and duties. Every two weeks, a designated member of management is to complete a safety inspection on each crew.
- **11 to 25 contractor employees and/or subcontracted workers on site**: The contractor's highest level of authority on site must be responsible for all health and safety activities and duties with the assistance of a part-time designated health and safety professional who must attend the project site once per week performing safety related functions (e.g., safety inspections, observations, meetings, etc.) and spend a minimum of four hours on site per visit.
- **26+ contractor employees and/or subcontracted workers on site**: The contractor's highest level of authority on site must be responsible for all health and safety activities and duties with the assistance of a full-time designated health and safety professional.

NOTE: *For every 100 additional workers, an additional full-time health and safety professional is required.*

AltaLink, while acting in a reasonable manner, reserves the right to ask the contractor to remove and replace the health and safety professional(s). Health and safety professionals are required to have relevant certification and training, and have successfully completed any of the following:

- Occupational Health Safety Certificate
- Canadian Registered Safety Professional
- National Construction Safety Officer
- Canadian Registered Safety Technician
- Others deemed competent by the contractor to act as a safety representative

3.12. Site work leaders

Contractor site leadership must be trained and competent to perform their roles. Leadership must be knowledgeable of:

- Laws and regulations applicable to the work to be performed
- Applicable safe work practices
- Hazard identification and controls related to the work to be performed
- Duties and responsibilities of all workers supervised
- Authority having jurisdiction for the area

Site leadership must also be able to:

- Respond to worksite emergencies
- Delegate duties to qualified individuals when appropriate

3.13. Training

Contractors are required to provide a site-specific orientation that incorporates minimum AltaLink safety requirements as outlined this document. Training documentation must be readily available for review by AltaLink. All workers, during all project phases, must be:

- Trained and technically competent in the specific aspects of their work and equipment they operate
- Fully aware of the hazards and associated controls

All training material, written rules and procedures, and worksite signs/instructions, are illustrated or in languages that can be readily understood by the workers. If this is impractical, a translator is required.

These AltaLink standards outline the requirements while on AltaLink sites:

- *AltaLink Safety Certification Standard* (ALS-1717)
- *Obtaining Certification for Switching, Grounding, and Isolations* (ALS-1942)

3.14. Competence and awareness

Contractors must be technically competent to perform their work and understand applicable requirements, responsibilities and industry best practices.

Contractors must ensure that subcontractors understand their responsibilities and are competent to perform their work.

4. INCIDENT MANAGEMENT

Contractors must report to AltaLink all incidents that occur when they are working on AltaLink projects. This requires contractors to have a documented incident management system in place for:

- Reporting and notifying
- Investigating and analyzing incident findings
- Recommending and developing action plans to prevent similar incidents

4.1. Incident categories and classifications

Contractors may have their own classification system for the purpose of reporting near misses and incidents. When reporting to AltaLink, the AltaLink classification system must be followed. Incidents may be categorized and classified following the criteria in *Table 1* on pages 9 to 13.

When near miss incidents occur that do not result in harm, injury, illness or damage but there was potential for a more serious outcome, near misses are classified as either Class 1 or 2.

Other categories are classified as Class 1, 2, or 3 depending on actual outcome and/or potential outcome. The most significant outcome across all categories is used to classify the incident.

An incident may have multiple impacts or the potential for impact, such as an injury, asset damage and environmental damage. In these cases, the incident is classified according to the most serious outcome and/or potential outcome.

Near miss incidents, which have been flagged as a potential significant near miss, are classified using the *Edison Electric Institute Safety Classification and Learning (SCL) Model*. The SCL model uses a consistent methodology to classify incidents using four yes/no questions and a flow chart. These questions are based around energy classifications (biological, electrical, mechanical, gravity, motion, etc.) and additional clarifying questions for each incident. Once the four questions have been worked through, there are three resulting SCL classifications that are considered class 2 significant near misses: capacity, PSIF, and exposure.

NOTE: *The SCL models is not used for environment related near misses.*

Table 1 is used for guidance when establishing the severity of the actual outcome and/or potential outcome.

Table 1: Categories and Classifications

Hazards	
	Examples: • Poor housekeeping • Doors/ gates/ padlocks left unlocked or open • Slightly worn components on a vehicle or equipment • External hazards or damage to perimeter fence • Bonds or grounds are damaged prior to entering the site • Visual evidence of release of electrical insulating oil from in-service equipment as a result of normal equipment operation of an estimated volume of <200L • Wildlife interactions that do not result in injury or mortality but require mitigation or other corrective actions
Health and Safety	
Class 1 Near Miss	Examples: • Non-medical treatment injury • Slip, trip or fall without injury
Class 2 Significant Near Miss	Class 2 Significant Near Miss will be assessed based on SCL model. Examples include: • Unsecured load where equipment or material fell • Mobile equipment upset • Overhead/underground power line contact • Working at heights without wearing the required personal protective equipment
Class 1 Injury/Illness	First aid as per 15 *Terms and Definitions*
Class 2 Injury/Illness	• Lost time incident • Restricted work • Occupational injury or illness as per definition • Medical aid as per definition
Class 3 Injury/Illness	Fatality
Environment	
Class 1 Near Miss	Release of less than 5 litres of: • In-service polychlorinated biphenyl (PCB) electrical insulating oil (<50 ppm) resulting in a cumulative PCB release of <0.75 grams • any substance (not including battery acid) • Non-conformance with an AltaLink standard, procedure, or project specific environmental requirement that can be rectified immediately
Class 2 Significant Near Miss	• Release of in-service polychlorinated biphenyl (PCB) electrical insulating oil (<50 ppm) resulting in a cumulative release of between 0.75 grams, and 1.0 gram of PCB • Action or event that had the potential to result in a Class II environmental incident

Class 1	Release of greater than 5 litres of: • PCB electrical insulating oil (<50ppm) from in-service equipment resulting in a cumulative PCB release of ≤0.75 grams • any substance (not including battery acid) • Release of battery acid <5L • Release of a greenhouse gas (e.g., refrigerants, SF6, CF4) less than 10 kg or less than a 10-minute sustained release • Activity that results in the death or injury of wildlife listed as "non-license animals" • Discovery of dead or injured wildlife on or within AltaLink facilities or rights-of-way • Non-conformance with an AltaLink environmental specification, requirement, standard, or procedure that cannot be rectified immediately
Class 2	• Release of a product or substance to the environment in excess of the quantities identified in *Appendix A - AltaLink Release Reporting Requirements* • Any substance released in any volume to a surface water body (including a wetland or watercourse) or groundwater • Disposal of waste at an unauthorized waste management facility • Activity that results in the disturbance or death of a migratory bird, disturbance or destruction of legally protected habitat, or injury/death of a species-at-risk • Deposition of a substance that is harmful to migratory birds, or permitting such a substance to be deposited, in waters or an area frequented by migratory birds, or in a place from which the substance may enter such waters or such an area • Commencement of construction, operations, or maintenance activities or works without the proper environmental approvals or notifications in place • Activities or works that are in non-compliance with the conditions of provincial or federal regulations, legislation, authorization, or approval • Formal notice of investigation or an environmental order issued by a provincial or federal environmental regulatory agency
Class 3	• Stop work order from a provincial or federal environmental regulatory agency • Incident resulting in a significant adverse effect on the environment • Charges, fines, or administrative penalties laid by a provincial or federal environmental regulatory agency
†**Power loss/reliability** (This is only taken into effect when the incident is human driven.)	
Class 1 Near Miss (Reliability)	• Human performance issue arising from activities at substations, control centres, telecom/network, energy management systems (EMS) or operational engineering that have an unexpected consequence, and have the potential to affect ACC's ability to manage the system, or potentially put the system/load at a higher level of risk • Affecting a single facility for a duration ≥ 30 minutes • Affecting multiple facilities for a duration between 15 and 30 minutes
Class 2 Significant Near Miss (Reliability)	• Human performance issue arising from activities at substations, control centres, telecom/network, energy management systems (EMS) or operational engineering that have an unexpected consequence, and have the potential to affect ACC's ability to manage the system, or potentially put the system/load at a higher level of risk • Affecting multiple (≥ 2) facilities for a duration ≥ 30 minutes • Affecting a critical AltaLink substation as defined in *Field Reliability Work Practices Standard* (ALS-1994), which leads to a reportable event

Class 1	• Human performance issue arising from activities at substations, control centers, telecom/network, energy management systems (EMS) or operational engineering that have an unexpected consequence, directly • Puts the system/load at a higher level of risk or affected the ACC's ability to manage the system (i.e. Isolation, energization/de-energization, and/or removal of system elements) **NOTE**: *Class 1 power loss events are reported and investigated according to guidelines for class 2 or 3 incidents*
Class 2	• Human performance issue arising from activities at substations, control centers, telecom/network, EMS, or operational engineering that have an unexpected consequence, and results in loss of load or generation within the following ranges: • **Load - Loss** of 0 to 299MW • **Generation** - Loss of single or multiple units totaling 0 to 499MW
Class 3	• Any human performance issue arising from activities at substations, control centers, telecom/network, EMS, or operational engineering that have an unexpected consequence, and results in loss of load or generation within the following ranges: • **Load - Loss** of ≥300MW • **Generation** - Loss of single or multiple units ≥500MW
†All power loss events are captured and investigated within the Transmission Outage Statistics System within System Operations, including power losses less than the Class 1 criteria.	
Physical security	
Class 1 Near Miss	• Trespassing where building strobes/sirens cause individuals to move off private property • Vehicle left unlocked
Class 2 Significant Near Miss	• Substation gate left open • Office doors/gates left open • Unauthorized access into a secured AltaLink site (without malicious intent)
Class 1	• Lost or stolen security access device (e.g., keys, access card, fob) • Security system offline (< 1 hour) • Minor property or asset damage where repair/replacement costs are between $0 and $50,000 (e.g., broken camera, vehicle damaged, vandalism) • Theft where the stolen items' replacement costs are between $0 and $50,000 • Theft from an external contractor working for AltaLink, but with no loss or damage to AltaLink property/assets • Unauthorized access/trespassing with malicious intent (e.g., theft, vandalism, etc.) • Aggressive correspondence/contact with no or minor threat of harm or damage • Suspicious activity and/or object related to an AltaLink asset • Evacuation of an AltaLink site due to an unsubstantiated threat or event (e.g., alarm monitoring)

Class 2	• Lost or stolen Grand Master (facility buildings) and CIP keys • Confirmed use of lost or stolen security access device (e.g., keys, access card, fob) • Security system offline for a significant period (> 1 hour) • Significant property where repair/replacement costs are between $50,000 to $250,000 • Theft where the stolen items' replacement costs are between $50,000 to $250,000 • Partial or temporary disruption or reroute of power (planned or unplanned) as a result of a physical security incident • Unauthorized access or trespassing with malicious intent beyond theft or vandalism (e.g., sabotage, power disruption, gaining access to BES) • Correspondence/contact with significant threat of harm or damage (e.g., bomb threat, violence) • Physical attack on employee with minor injuries • Confirmed device (i.e. Incendiary) or malicious activity related to an AltaLink asset • Evacuation of an AltaLink site due to a substantiated threat or event (e.g., fire, gas leak, flood, suspicious package)
Class 3	• Complete de-energization of one or more substation or telecom sites resulting from a physical security incident • Physical attack on employee resulting in significant injuries/fatality • Theft where value of stolen items exceeds $250,000
Vehicle/property	
Class 1	• Vehicle damage not related to a PVA • Property damage under $100,000
Class 2	• Preventable vehicle accident (PVA) • Property damage between $100,000 and $999,999
Fire ignition incidents	
Near Miss	• An ignition originated on an AltaLink asset (substation equipment and/or lines) and the ignition is contained to the asset/structure, but there is no evidence or indication the ignition spread to another fuel source (i.e., cross arm and/or pole fires where the flame is contained to the structure)
Class 1	• An ignition has originated from an AltaLink asset or employees/contractors and spread to another fuel source but did not require suppression efforts by a third party. • The fire has no impact to human life but may have a small impact on adjacent property (e.g., damaged to a nearby fence).
Class 2	• An ignition has originated from AltaLink assets or employees/contractors and has spread to another fuel source, requiring third party suppression efforts. • The fire may have some impact on adjacent property, but no impact to human life • The cost of fire response is <$200,000
Class 3	• Ignition originated from AltaLink assets or employees/contractors, that spreads to another fuel source (e.g., vegetation) which results in a material impact to property/ communities or impact to human life • AltaLink's fire response or damage cost is >$200,000

Production loss	
Class 1 Incident	All post-Stage Gate 3 (Sanctioned) CRU projects where a project: • Is demobilized prior to completion of construction unless planned that way • Construction phase is rescheduled after completion of the construction readiness meeting • Estimated project (waste) is $10,000 to $39,999
Class 2 Incident	Estimated project loss (waste) is $40,000 to $249,999
Class 3 Incident	Estimated project loss (waste) exceeds $250,000
Customer escalation	
Class 1 Incident	Customer site access concern[1] • AltaLink employee or contractor denied access to customer facility (i.e., did not provide advance notice, or follow site access requirement, etc.) • Customer has raised concern about AltaLink employee or contractor requesting access to substation or transmission line located on or adjacent to the customer facility • Customer escalates an issue or concern to a Director or its Key Executive Owner. Concern or issue could relate to: ○ Outage management (planned/unplanned) ○ Operational coordination ○ Capital project cost, schedule ○ Commitment ○ Other

†† Production Loss is applicable to Sanctioned Capital Replacement and Upgrade (CRU) projects. Sanctioned CRU projects are those that have successfully passed Stage Gate 3 of the CRU Project Delivery Model (PDM).
[1] Not applicable for FortisAlberta sites

4.2. Reporting and investigating

All near misses or actual incidents that occur during work must be reported to the AltaLink Manager, Project Manager, or delegate. Incident notification and reporting requirements vary depending on type and classification of incident. Refer to Table 3 for classification and reporting requirements.

Depending on the severity or potential severity of an incident, post incident alcohol and drug testing may be required as part of the investigation. Refer to *Alcohol and Drug Standard for Contractors* (ALS-2026) for guidance.

Table 2: Classifications and reporting requirements

Injury / Illness, Environment, Power Loss, Security / Reputation and Asset Damage	Verbal notification within 2 hours	Preliminary report required within 24 hours	24-hour conference call required	Cause investigation and action plan required	Final report required within 7 calendar days
Class 1	Yes	Yes	No*	No*, **	Yes
Class 2	Yes	Yes	Yes	Yes	Yes
Class 3	Yes	Yes	Yes	Yes	Yes
Near Miss Reporting					
Class 1 Near Miss	No	No	No	No	Yes
Class 2 Near Miss	Yes	Yes	Yes	Yes	Yes
* Class 1 power loss events are reported and investigated according to guidelines for class 2 or 3 incidents ** Upon request from AltaLink, a root cause methodology investigation may be required					

4.2.1. Class 1 near miss report information requirements

The following information must be included when reporting a Class 1 near miss:

- Date/time
- Contractor – organization contracted directly to AltaLink
- Sub-contractor – organization that experienced the incident (if different from contractor)
- AltaLink project manager
- AltaLink project number
- Title identifying the incident
- Description of events
- Immediate actions
- Learnings

4.2.2. Class 2 near misses and incidents

AltaLink requires the incident to be reported within two hours of the incident occurring. The contract company is required to participate in the 24 hour call. The conference call is to discuss the incident and review immediate actions taken and identify next steps. The 24 hour call is arranged by the AltaLink representative.

AltaLink reserves the right to:

- Request an investigation of any incident
- Participate in a contractor's investigation team or to perform a separate investigation
- Request to have available all information and workers related to an incident under investigation
- Request copies of all documentation from the contractor to facilitate the investigation process

4.3. Incident management procedure

Contractors will respond and manage the incident following their formalized process, which must include promptly securing and controlling the scene, completing an investigation (including root cause methodology), and determining an action plan.

To prevent further losses, immediate remedial actions must be taken at the incident scene and incident information must be reported.

When an incident occurs, the person-in-charge (contractor) must do the following:

1. Take control of the scene:
   - Stop all work if necessary
   - Assess and control hazards
   - Secure the site to minimize the risk of further injury, or damage to property or the environment
2. (Class 2 and 3) Cordon off and preserve the scene; do not let anyone else enter who is not managing the incident
3. Take note of people leaving the scene
4. Coordinate first aid and call for emergency services as needed (refer to the Emergency Contact List and Project Emergency Response Plan)
5. Take appropriate measures to prevent potential secondary incidents
6. Ensure that material, equipment, or documentation related to the incident are not altered or removed
7. Identify and preserve evidence:
   a. position (photos, sketches, measurements)
   b. people (witness statements)
   c. paper (safe work plans, procedures, permits, etc.)
   d. parts (view and examine physical items)
8. Notify the AltaLink Project Manager and report as per Table 2 *Classifications and reporting requirements*

5. NOTIFICATIONS TO A GOVERNMENT BODY

5.1. Safety incident and significant near miss

When an injury, incident, or any other event that has the potential to cause serious injury to a person occurs at a worksite, the prime contractor is required to provide a verbal report (email, voicemail, or text is not acceptable) to AltaLink, including the time, place and nature of injury or incident. The prime contractor must then report the incident to Alberta Occupational Health & Safety (OHS).

AltaLink requires notification of an incident or injury before notification to a government body.

When an incident happens that requires reporting to OHS per *Table 3* below, the following must be completed by the prime contractor:

- Prepare a written report outlining the circumstances of the injury or incident and the corrective action undertaken to prevent a recurrence of the injury or incident.
- Complete all required internal reporting prior to submitting the final report to a governing body (e.g., Alberta OH&S)
- Provide a copy of the report to a governing body
- Provide a copy of the report to the Joint Site Health and Safety Committee

Table 3: Examples of safety incidents per government body

SAFETY	
Incident	• Injury, illness, or incident that results in a fatality • Injury, illness, or incident in which there is reason to believe the worker has been or will be admitted to a hospital beyond treatment in an emergency room or urgent care facility • Unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury • Collapse or upset of a crane, derrick, or hoist • Collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure
Significant near miss	If an incident had a likelihood of causing a serious injury or illness, and there is reasonable cause to believe that corrective action may need to be taken to prevent recurrence

5.2. Regulatory reportable environmental incident

An incident may require immediate verbal notification and may need to be followed by a written report to a government body by the prime contractor.

Prior to making verbal notification to a regulatory agency, the prime contractor shall notify the AltaLink Environment Manager to confirm incident classification.

Verbal notification and reporting requirements for each incident type are summarized below.

Table 4: Environmental incident notification requirements to government body

ENVIRONMENT	
Incident	Any class 2 or 3 environmental incident as described in Table 1
Regulatory agencies	• Alberta Environment and Protected Areas (AEPA) • Fisheries and Oceans Canada • Environment and Climate Change Canada (ECCC)
Verbal notification requirements	• Where an incident occurs that requires verbal notification to be made to AEPA. The contact information for the prescribed authority is **AEPA 24-Hour Environmental Hotline (1-800-222-6514)**
Reporting requirements	• Person responsible for the verbal notification must provide a written report to AEPA within 7 calendar days • AltaLink Environment Manager will prepare a transmittal letter to accompany the written report to AEPA
Incident	• When a release or anticipated release meets the requirements under S8.2 and/or S8.4 of the *Transportation of Dangerous Goods Regulation (TDGR)* • *Release or Anticipated* Release Reporting is required in all instances in which a means of containment is damaged (e.g., in an accident or through handling) such that its integrity is compromised in a way that may lead to a release • There are exemptions for release reporting if the dangerous goods meet the requirements of the 150 kg exemption (refer to the *TDGR S. 1.15* for more information)

Regulatory agency	Transport Canada (*TDGR S. 8.2, 8.3, S. 8.4, 8.5*)
Verbal notification requirements	• Person who has possession of the dangerous goods at the time of the release or anticipated release must make the verbal notification(s) • If a release or anticipated release meets *TDGR S. 8.2*, an Emergency Report must be made immediately to local police and **Alberta Environmental and Dangerous Goods Emergencies (EDGE) at 1-800-272-9600 (24-hour line)** • Following local and provincial notifications above, if a release or anticipated release meets *TDGR S. 8.4*, a Release or Anticipated Release Report must be made to **CANUTEC at 1-888-226-8832** • Following local, provincial, and federal notifications, the release or anticipated release must be reported to the consignor of the dangerous goods
Reporting requirements	• An Emergency Report must meet the requirements identified in *TDGR S. 8.3* • A Release or Anticipated Release Report must contain the information outline in *TDGR S. 8.5* • When a release or anticipated release report is made, the person responsible for the verbal notification must prepare and submit a 30-day follow-up report and submit to the Director General and the AltaLink environmental manager within 30 days after the initial report was made • The 30-day follow-up report must contain the information outlined in *TDGR S. 8.7*
Incident	• Commence work without *Historical Resources Act* approval • Disturbance of known historical resources • Disturbing previously unknown historical resources
Regulatory agency	Ministry of Arts, Culture and Status of Women
Verbal notification requirements	Immediately contact the AltaLink environment department, who will immediately contact the Ministry of Arts, Culture and Status of Women

6. HEALTH AND SAFETY STATISTICAL REPORTING

Designated contractors are required to track health and safety performance statistics for the work and submit the information to AltaLink on an agreed upon timeframe. Proactive and reactive measures are monitored and reported.

As a minimum, contractor hours must be submitted monthly, prior to the fifth calendar day of the month. This information can be submitted to ComplyWorks program>Total worker exposure hours in the month.

7. FIRST AID, MEDICAL, AND EMERGENCY RESPONSE

7.1. First aid and medical

The contractor must have a documented program in compliance with *Alberta OH&S Code* Part 11 and Schedule 2 requirements.

7.2. Emergency preparedness and response

The contractor must have an emergency response plan in compliance with *Alberta OH&S Code* Part 7 to handle all emergency situations that could arise on the site. This plan must be effectively communicated to workers and key response information affixed at strategic locations in the workplace.

The contractor must also comply with *Alberta OH&S Part 11* and *Schedule 2* requirements for first aid including:

- site-specific transportation plan, with a map and preferred route to the nearest medical facility
- emergency phone numbers
- designated workers to supervise and perform emergency response activities

NOTE: *All workers on site are required to sign off on the emergency response plan indicating they understand and are comfortable with executing the plan.*

7.2.1. STARS Vigilant Emergency Communications Centre

The STARS Vigilant Emergency Communications Centre (1-888-888-4567). is the first point of contact in the event of a significant injury or medical emergency. The STARS Vigilant Emergency Communications Centre site identification number (ID#) must be in place before work begins.

The *STARS Vigilant Site Identification Number for Temporary and Permanent Sites* (ALS-2062) outlines the requirements for setting up permanent and temporary worksites.

If an injured worker is transported to a medical facility using transportation from the worksite, the worker is accompanied by at least one first aider in addition to the transportation operator.

7.3. Rescues and rescue plans

A minimum of two appropriately trained emergency response and rescue workers must:
be readily available to perform rescue duties when required.

- be trained in emergency response and rescue procedures appropriate to the worksite, location (e.g., remote), and the potential emergencies identified on the emergency response plan
- document the emergency response plan
- be provided with readily available equipment and PPE appropriate for the worksite and potential emergencies

8. HAZARD MANAGEMENT AND CONTROL

8.1. Hazard management

Before commencing work on an AltaLink worksite, contractors must conduct and document hazard assessments at each work phase and whenever there is a significant change in the physical or environmental conditions on the worksite. This must be done in accordance with *Alberta OH&S* Part 2. All manner of hazards – physical, chemical, electrical and environmental – are identified, assessed, and eliminated, if possible. If elimination is not possible, controls must be devised and implemented to reduce hazard risk as low as reasonably practicable.

Emergency control of a hazard must meet requirements of *Alberta OH&S* Part 2.

Hazard assessments must be documented and kept on site. Risk Assessment records must include:

- Description of the hazard(s)
- Possible adverse scenarios
- Controls needed to mitigate the hazard(s)
- Protective and precautionary measures for workers and the environment

Workers must be fully aware of all identified hazards and controls and sign off on hazard assessments.

8.2. Daily tailboard meetings

Individual work crews are required to hold a documented tailboard meeting prior to commencing work. The tailboard documents include the following information:

- Person-in-charge or site supervisor
- Emergency response information
- Description of work to be performed
- Existing and potential hazards associated with the work
- Controls used to mitigate or eliminate identified hazards
- All specific actions required from a safe work permit (if one is issued)
- Signatures from all workers involved to indicate that they have participated in the hazard assessment and are aware of the hazards and associated control measures
- Daily fire rating

The documented tailboard meeting process is repeated daily and when there is:

- Change to scope of work
- Change in worksite conditions
- Unforeseen or unplanned complications
- Incident occurrence
- A requirement to prevent the development of unsafe and/or unhealthy working conditions

8.3. Close out meeting

At the end of the day, a safety close-out meeting is required to provide workers with the opportunity to sign off tailboard indicating there are no unreported injuries, incidents, or new hazards resulting from the day's activities.

8.4. Handover

Contractors who accept Prime must turn Prime back over to AltaLink. Prime Contractor cannot give Prime to another contactor. Where a contractor accepts the role of Prime Contractor and has the required documentation in place, they must issue work permits at AltaLink worksites. The work authorization system used on the project is in effect from the start of construction.

See the *Prime Contractor Standard* (ALS-2012) for more information about handover, turnover, and Prime Contractor responsibilities.

NOTE: *This system must be aligned with the following AltaLink standards:*

- *AltaLink Safety Certification Standard* (ALS-1717)
- *Obtaining Certification in Switching, Grounding, and Isolations Standard* (ALS-1942)
- *AltaLink Facility Isolations* (ALS-818)
- *Field Reliability Work Practices Standard* (ALS-1994)

9. PERSONAL PROTECTIVE EQUIPMENT (PPE)

9.1. General

Contractors must have a program in place that meets or exceeds the requirements of Part 18 of the *Alberta OH&S Code*. Additionally, PPE is selected based on hazard assessments, regulatory compliance, and in accordance with specific Safety Data Sheet (SDS) requirements.

Contractors must ensure all workers (including subcontractors) who are visiting or working on an AltaLink worksite comply with the minimum PPE requirements, including:

- Head protection
- Safety footwear
- Eye and face protection
- High visibility protective clothing
- Protective gloves appropriate for the task

At all AltaLink worksites, long sleeve shirts and long pants must be worn.

9.2. PPE exceptions

Based on a formal hazard assessment of a worksite, minimum PPE outlined in section 9.1 may not be required during the performance of some indoor activities where certain hazards do not exist. This exception may include working at a computer station, reading prints, or performing tailboards. Minimum PPE requirements must always be readily available and used otherwise.

The person-in-charge may also designate a PPE-free zone, allowing workers the ability to travel from vehicles to buildings on site.

9.3. Eye protection

The *Alberta OH&S Code* requires workers wear and properly use eye protection that meets *CSA Standard Z94.3 Eye and face protectors.* ASTM Z87.3 safety glasses do not meet Alberta OH&S requirements.

Workers performing hazardous activities that may expose them to heat, sparks, splash from molten metals (e.g., grinding, cutting) and small debris (such as metal filings) are required to wear a Class 6C face shield. In addition, workers engaging in these activities are required to wear sealed safety glasses or Class 2B safety goggles beneath the required face shield.

NOTE: *Face shields constructed of wire mesh are only applicable in protecting workers against larger debris. Ensure a proper hazard assessment is completed prior to choosing any face shield. A mesh face shield is never acceptable involving work activities requiring a Class 6 face shield.*

9.4. Fire resistant (FR) clothing

Fire resistant clothing that complies with CAN/ULC S801 is required for workers performing tasks identified as having potential for exposure to electric arc or hydrocarbon flash fire. Contractors must assess the work and requirement for fire resistant clothing before workers arrive on site. Once the facility is connected to the power system, fire resistant clothing is mandatory for working on the isolated lines or equipment.

FR clothing must have a minimum arc thermal protective value of 335 kJ/m2 or 8 cal/cm2 (minimum clothing class number acceptable is class 2). FR clothing is required at all functional facilities except some stand-alone telecom sites.

FR clothing may not be required on some sites as outlined in *AltaLink Safety Certification Standard* (ALS-1717). High-visibility clothing must always be worn.

9.5. Safety footwear

Safety footwear must:

- Meet CSA standard Z195 *Protective footwear* (have the CSA green triangle symbol)
- Have the Omega symbol, indicating they are rated to 18,000 V when new (this protection decreases with condition and time)



NOTE: *Based on the written Hazard Assessment for the work being performed, metatarsal guards are required when using equipment such as jumping jack styled compactors.*

Specialized footwear may be required in certain facilities; please see *Working Around Exposed Ground Grids in an Energized Substation* (ALS-1405) for more information.

9.6. Traction aids

Appropriate traction aids (in good working condition) are required based on the hazard assessment or the task and ground conditions (e.g., winter conditions). Before work begins and throughout the day if conditions change, workers must assess slipping hazards. If workers are unable to eliminate the hazards, traction aids must be added to footwear.

Care must be exercised when wearing traction aids indoors or on metal surfaces. Traction aids with metal studs or spikes may become very slippery in metal-to-metal conditions. It is recommended that traction aids be removed in these situations.

Traction aids must not reduce the electrical rating of the footwear. Modifying PPE (e.g., screwing steel studs into the soles of boots) is not permitted.

9.7. Head protection

Head protection must meet the requirements of *Alberta OH&S Part 18*. All safety headwear must be compliant with the CSA Z94.1 or ANSI/ISEA Z89.1 Standard. Head Protection identified as Class E, Type 1 with crown impact is required on all jobsites where the potential for lateral contact to a worker's head exists.

9.8. Hand protection

Contractors must wear gloves at work sites, except as noted in the Hazard Assessment. Type and cut-resistance level of glove required is job dependant. Personal preference is considered, provided the gloves meet the minimum requirements for the job being performed. Those attending site visits must have gloves readily available on their person.

Gloves must be appropriate for the task and protect against recognized hazards, which may include:

- Impacts, cuts, and abrasions
- Extreme temperatures
- Chemical and other hazardous substances

If a hazard assessment determines that cut-resistant gloves must be worn, the minimum rating is a cutting resistance of Level 3.

9.9. Respiratory protective equipment

Contractors must have a respiratory code of practice in place that meets or exceeds the requirements of Part 18 of the *Alberta OH&S Code*.

9.10. Jewelry, hair, and loose clothing requirements

Contractors must have a program in place that addresses safety when working around machinery and equipment with moving parts as outlined in Part 25 of the *Alberta OH&S Code*.

If contact between moving parts of machinery, electrically energized equipment, or any other tools or equipment and a worker's clothing, jewelry or hair is likely, a worker must:

- Wear close-fitting clothing that does not have any loose or dangling strings or zipper pulls
- Not wear bracelets, rings, dangling neckwear, a wristwatch, or similar articles
- Have head or facial hair that is short, or can be confined so it cannot be snagged or caught

9.11. Noise and hearing requirements

Contractors must implement a noise and hearing management program that meets or exceeds Part 16 of the *Alberta OH&S Code*.

Contractors must ensure hearing protection is worn where noise levels are $\geq$ 85 dBA at a worksite.

10. WORKING AT HEIGHTS

10.1. Fall protection

Contractors must establish a fall protection program that meets or exceeds Part 9 of the *Alberta OH&S Code*. Workers who work at heights must use fall protection equipment, attend fall protection training and demonstrate competency in using the equipment.

A fall protection plan must be developed if a fall of 3 metres vertical distance or more may occur during work and guardrails do not protect workers.
This plan must specify:

- Fall hazards at the site
- Fall protection system to be used at the site
- Anchors to be used during the work
- Clearance distances below the work area, if applicable, must be confirmed as sufficient to prevent a worker from striking the ground, objects, or levels below the work area
- Procedures used to assemble, maintain, inspect, use and disassemble fall protection systems as applicable; these procedures must be in place prior to work commencing.
- Rescue procedures to be implemented if a worker suspended by a fall arrest falls and needs rescue

The fall protection plan must be available at the worksite and reviewed by all workers prior to beginning any work at heights. The plan must be updated whenever conditions affecting fall protection change.

Rescue procedures must be developed and available at the worksite, along with the appropriate rescue equipment outlined in these procedures. A minimum of two appropriately trained workers must be readily available to perform rescue duties if needed.

10.2. Drop zones

When tasks are being performed from heights or where objects (e.g., tree, structures, or during lifting operations) can fall, risks must be evaluated and an adequate drop zone established. In addition, the hazard assessment must address dropped objects, and mitigations must be in place before proceeding.

- Workers must create a visible drop zone using flagging, ribbon, or pylons and/or have a designated safety watch
- Contractors must have procedures in place that mitigate hazards where workers enter drop zones. All work above must stop, and all materials and tools must be secured (e.g., tool tethering device). Work may only continue when the drop zone is clear.
- Establish effective communication (e.g., two-way radios) between ground and elevated workers.
- Tie off tools and materials with a small piece of non-conductive material (rope) or a rated sling attached to both the tools or materials and the work area
- All equipment and materials must be raised and lowered in a controlled manner and not dropped into the drop zone
- Any equipment used aloft must be inspected prior to being hoisted or used
- Once a work position is established, send tool bags or tool buckets on a handline to workers working at heights
- Secure the hoisted bags in position so they cannot be accidently turned upside down
- Use tool tether, tool bucket, or tool pouches with covers to prevent tools from falling out
- Once workers are in position, work can be performed using tied off tools
- Prior to climbing at heights workers are required to inspect their tool holders (e.g., frogs, nose bags) daily, and replace them when they are damaged or worn out
- To protect the public when working alongside pathways, walkways, and or other areas, contractors must have visible warning signage in addition to the drop zones

10.3. Telecom towers

Telecom tower rigging companies are required to have a process and documented checklist for guyed tower pre-climb work. Anchors and guy wires must be inspected prior to climbing telecom towers.

10.4. Use of conductor carts

Contractors need to have their own procedure to operate conductor carts, including:

- Planning
- Hazard assessment
- Checking and documenting adjacent spans
- Training requirements
- Maintenance requirements
- Risk of hardware failure/vertical workers or equipment
- Rescue planning
- Brake design concerns
- Incline or decline on the line

Conductor cart use is not permitted:

- When execution of a workable rescue plan is not possible
- On an overhead shield wire
- On a single-conductor configuration smaller than 795 Drake conductor
- On a single-conductor configuration, 795 Drake conductor or larger, where there is damage or a splice within the span to be worked on, without permission from AltaLink Engineering
- On bundled conductor sizes smaller than 397.5 MCM ACSR 26/7
- When the total weight of the cart, tools, equipment and worker exceeds 400 kg

If a damaged conductor is found during inspection, contact AltaLink Engineering to verify the conductor is safe to use for the conductor cart activity.

10.5. Flight operations

10.5.1. AltaLink helicopter standards

Contractors must follow the health and safety standards related to helicopter work listed below:

- ***Aerial Patrol Standard* (ALS-2079):** Includes information for various types of patrols, including scheduled, emergency, detailed, and data acquisition air patrols
- ***Aerial Worker Transportation Standard* (ALS-2081):** Includes information on the transportation of workers in a helicopter. This may include transporting workers to remote sites, high-level inspections, environmental surveys, and transporting engineering or management workers for post storm/events.
- ***Helicopter Material and Tool Transportation Standard* (ALS-2078):** Includes long lining and stringing (pulling in a conductor or pilot line with a helicopter) work activities. This includes longlining tools, equipment, and materials to sites via helicopter.
- ***Helicopter Material and Tool Transportation Checklist* (ALS-2078F1)**
- ***Helicopter Material and Tool Transportation and Work Acceptance Form* (ALS-2078F2):** Required to obtain AltaLink Management approval for this type of work activity. The checklist is a resource to help manage the tools and materials that are transported in and out of the worksite and ensure load securement.
- ***Helicopter Human Cargo, Structure Transfer, and Platform Standard* (ALS-2080):** Covers helicopter platform work and entries and exits to or from structures
- ***Helicopter Human Cargo Acceptance Form* (ALS-2080F1):** Required to obtain AltaLink Management approval for this type of work activity

All contractors using aircraft to perform work are expected to have a flight operations safety management program, which includes the elements outlined in this section.

10.5.2. Flight planning and scheduling

All flights (including UAVs, fixed wing, and helicopter) over existing or proposed facilities require flight planning and scheduling as per the AltaLink *Flight Planning and Scheduling Standard* (ALS-2058).

10.5.3. Unmanned aerial vehicle (UAV) operators

In order to fly a UAV, contractors are required to have basic training in compliance with Transport Canada. If contractors are required to fly in a “controlled air space,” advanced training is also required. This process is subject to change and contractors must meet current training and operation requirements.

10.6. Helicopter operations

10.6.1. Pre-qualification

Contractors intending to use helicopters to perform work for AltaLink need to pre-qualify the helicopter vendor. In addition to traditional pre-qualification elements (e.g., WCB, proof of insurance, certificate of incorporation), the contractor is required to follow set criteria for current regulatory aviation audits from helicopter vendors they intend to use on AltaLink projects. The audit results help to gain a perspective on the functionality of the helicopter vendor (as pertaining to the working relationship with the contractor), its workers, and abilities to function safely in the wire environment.

As a minimum, the audit scope needs to address the following elements:

- Flight operations, pilot experience, and training records
- Transportation of dangerous goods
- Flight and maintenance operations
- Safety management systems

Audit results must not identify major discrepancies that contravene *Alberta OH&S*, the *Canadian Aviation Regulations* (if noted), the company Operations manuals, nor company Standard Operating Procedures. Any corrected audit findings must be satisfactory to the contractor. All operations are required to comply with the *Canadian Aviation Regulations* (CARS).

10.6.2. Training, competencies and minimum hours

Refer to the AltaLink standards listed in 10.6.1 *AltaLink helicopter standards* for specific information on required pilot training, experience, and minimum number of hours to perform the work.

10.6.3. Restricted helicopter zone

Please refer to *Aerial Worker Transportation Standard* (ALS-2081) for information on this topic.

10.6.4. Crew safety protocols and operations

Please refer to the helicopter standards listed in section 10.5.1 *AltaLink helicopter standards* for information on flight operations, crew safety protocols, PPE, procedures, and documentation.

Contractors must define crew safety protocols for pre-flight, in-flight, and post-flight operations along with minimum crew complements that meets or exceeds industry best practices.

10.6.5. Inspections

Contractors are required to have a site inspection process in compliance with standards and policies. Site inspections frequency must be based on the project scope and length. Inspections may be in the form of focus audits, worksite inspections, or review of documents, etc.

11. SAFE WORK PRACTICES

11.1. Housekeeping

Work sites must be kept clean and free from materials or equipment that could create slip or trip hazards in compliance with *Alberta OH&S* Part 12:

- Keep walkways and roadways clear of slipping and tripping hazards
- Dispose of refuse in compliant bins
- Equipment, materials, or waste must be contained, restrained, or protected to eliminate potential hazards
- Keep worksites clear of protruding nails, screws, staples, or other objects that present a hazard to employees or vehicles
- Elevate or cover hoses, cables and cords over walkways and landings
- Coil and secure hoses, cords, cables and their connections and store on appropriate hangers off the ground
- Only hoses, cords, or cables required for tasks are placed on the ground and kept at the shortest length possible with excess being coiled
- Fire extinguishers must remain readily accessible and ready for use at all times
- Entrances/exits must not be blocked

11.2. Human Performance Initiatives (HPI) flagging

Human performance errors contribute to the frequency of incidents occurring when working on AltaLink sites. Human performance measures are integrated throughout AltaLink operations. Contractors are encouraged to consider opportunities to integrate HPI into their operation and work procedures.

Flagging equipment is a method or tool to visually identify safety and reliability hazards to reduce or eliminate the frequency of related personal incidents.

Contractors are required to source their own work zone kits to flag equipment. Flagging is only one method used to improve human performance. Barriers or engineered solutions may also be used.

Below are examples of human performance tools:

- Administrative – work procedures or Field Level Hazard Assessments (FLHA)
- Engineered equipment – lockout/tagout, interlock systems
- Physical controls – barricades, hotstick hand guards (nylon, rubber)
- Visual controls – flagging, signage, drop zones, cones or markers

Some of the work activities that require application of human performance initiatives include:

- Working on protection packages during maintenance activities
- Switching activities
- Installing new equipment within the control building
- Trouble-shooting equipment that may have failed
- Helicopter work activities

Information regarding flagging AltaLink equipment and work zone kits is available in the *HPI Flagging Procedure (*ALF-ALL-1999). Contractors may use the procedure or create/use their own procedure. The *HPI Flagging Procedure* is available on the Contractor Safety website.

11.3. Use of spotter

Contractors performing work for AltaLink are required to have a spotter program (including training) with the following elements:

- General spotter requirements and responsibilities
- Operator responsibilities
- Hazard assessment and control
- Communication methods (including hand signals)
- Blind spot identification
- Spotter positioning

When there is the potential of vehicle or equipment movement causing injury or damage through inadvertent contact with people, materials, facilities, vehicles or equipment on an AltaLink worksite, a spotter must be used. Some examples of when spotters are required:

- Maneuvering large vehicles or equipment through gates, or into/out of buildings or structures
- Reversing or maneuvering vehicles pulling trailers
- Moving equipment near excavation sites
- Operating near energized lines and equipment*

***NOTE:** *Additional requirements for spotter use are identified in section 11.10.4. Operating equipment near energized facilities*.

When a hazard assessment determines that a spotter is required, all workers involved (e.g., operator, spotter, and other affected crew members) must perform a hazard assessment to identify what could potentially be contacted and how it will be avoided.

The following requirements must be adhered to:

- Spotters must not perform any other tasks while acting as spotter
- Driver or equipment operator must not move the vehicle or equipment without clear direction by the spotter
- Driver or equipment operator must immediately stop work if visual contact is lost, or if a spotter's instruction or signal is unclear
- Driver or equipment operator must observe a stop signal from anyone in the vicinity
- Spotter must never move out of the driver's line of sight without first stopping the vehicle or equipment

11.4. Confined space entry

Contractors entering confined or restricted spaces must develop and document a code of practice that meets or exceeds *Alberta OH&S* Part 5, and is readily available to workers and inspections as required.

11.5. Ground disturbance

All ground disturbance activities are required to comply with applicable governing laws and regulations (including *Alberta OH&S*) and industry best practices to safely execute work.

Contractor must coordinate locate requests through Utility Safety Partners (formerly Alberta One-Call) prior to commencing ground disturbance activities.

11.6. Excavations and trenching

Contractors must establish a program that protects workers and existing facilities that could be affected by excavating or trenching operations. The program must meet or exceed *Alberta OH&S* Part 32.

Contractors must fence, barricade, or cover excavations, trenches and openings in compliance with regulations, and control access to sites where excavations or openings are left unattended. Appropriate signage and notices must be posted warning of the potential danger.

Any excavations within a substation exposing the ground grid in an energized substation must meet the requirements of *Working Around an Exposed Ground Grid in an Energized Substation* (ALS-1405). Workers entering the excavation for any duration must be protected by a mitigation plan outlined in the standard.

11.7. Equipment access and egress

Contractors must ensure they have three-points of contact requirements in place and traction aids available when accessing or egressing equipment.

11.8. Propane standards

Propane equipment must be used according to manufacturer recommendations, local applicable regulations, and section 3.9 *Workplace Hazardous Materials Information System*:

- Physically barricade propane tanks – pylons and ribbons are not sufficient.
- Conduct pre-use inspections on all cylinders, valves, fittings, and hoses
- Secure propane cylinders transported on site in an upright position during transportation
- Securely store propane cylinders in an outdoor location when not in use
- Cylinders, once fully discharged, must be moved to designated storage locations
- Propane torches must not be used for heating hoardings or any other enclosure

11.9. Right-of-way and roadside

Contractors require a Traffic Accommodation Strategy (TAS) to control traffic for work alongside a road, or that could impact traffic. The TAS must comply with municipal, county, and provincial requirements for public roads, landowner requirements for private roads, and any additional requirements specified in crossing or road use agreements.

When work is conducted in a public road right-of-way or otherwise exposed to traffic, workers must be provided with and instructed to wear PPE with reflective or highly visible material. PPE must meet minimum requirements for AltaLink PPE worksites. See section 9. *Personal Protective Equipment (PPE)*for more details.

Workers must not cause unnecessary hazards or impediments to public drivers. All applicable rules of the road must be adhered to. When entering or leaving a worksite, vehicles must be pulled as far off roadways as possible. Workers shall not gather on any roadway where public traffic is present.

Barricades, cones, flashers, and warning signs must be placed at strategic locations when working on or near roads and other areas where vehicular traffic may be a hazard. Signs must be staged within the applicable distances of the road use agreement and promptly removed when no longer required.

11.10. Power lines and high voltage work areas

11.10.1. Live work

Live work must be conducted in adherence to *Live Work Standard* (ALS-2030). Live work is deemed to be safety-critical and requires additional due diligence to safely execute. Live work must be approved by AltaLink. Before live work begins, the *Live Line Work Contractor Acceptance Form* must be completed.

11.10.2. Significant electrical hazard work

Some activities are classified as "significant electrical hazard work." These work activities include working:

- Directly above energized conductors or an energized bus in a substation
- On a line above energized underbuild on the same structure
- Repairs or replacement of guy wires above energized conductors
- On a structure with energized transmission underground risers (i.e., connecting underground transmission line to overhead transmission line)
- Within minimum approach distances of energized underground transmission cables

The criteria for managing significant electrical hazard work follows the process described in:

- *Live Work Standard* (ALS-2030)
- *Live Line Work Contractor Acceptance Form* (ALS-2030F4)

11.10.3. Increased electrical hazard work

Some work activities are classified as "increased electrical hazard work." These work activities include:

- Stringing in a high induction corridor
- Stringing over an energized conductor or energized equipment
- Structure modifications or adjustments that have potential for the pole, structure, or conductor to fail, move unexpectedly and come into contact with people or the ground
- Working on a line that crosses over an energized line (in the same span)
- Climbing structures (i.e., towers or poles) past energized conductors while maintaining minimum approach distances from energized phases
- Working on double circuit structures with one circuit energized

Prior to performing increased electrical hazard work, contractors must create a hazard assessment and safe work plan (or procedure) with a minimum of the following elements:

- Method(s) to maintain minimum approach distances (e.g., workers, tools, materials, rigging, and equipment)
- Method(s) for creating and maintaining drop zones
- Applicable secondary safeguard(s) to prevent tools, materials, and equipment do not contact energized equipment in the event of a mechanical failure (e.g., rider poles)
- Recloser blocks (necessary for most activities identified)
- Training and competency assessment of workers in the plan/procedure required to perform assigned tasks
- Internal process where the hazard assessment, safe work plans/procedures, and crew compliment are reviewed, accepted, and endorsed by a senior leader in the organization

11.10.4. Operating equipment near energized facilities

When possible, facilities must be de-energized when travelling below or working nearby with equipment that has the ability to reach within the safe limits of approach.

If facilities cannot be de-energized, there must be a qualified utility work leader on site to oversee the work. There must also be appropriate controls in place, such as:

- Isolating and grounding equipment where limits of approach or minimum approach distances cannot be maintained
- Obtaining a reclose block, maintaining limits of approach or minimum approach distances, and having a dedicated safety watch

The contractor must have a system in place to adequately manage the hazards of operating equipment near energized facilities, containing the following elements:

- Means to determine the voltage and safe limit of approach
- If the voltage is unknown, the limit of approach is seven metres
- Positive methods of control (such as signage, flagging, goalposts, spotters) to ensure safe limits of approach are not breached method to communicate hazards and related controls to all
- Contact prevention training for workers on how to avoid injury from step/touch potential in the event of contact

Examples of acceptable means of control are:

- Equipment with boom (e.g., crane, trackhoe, backhoe) crossing below or working near an energized power line:
    - Signage, flagging – HPI Tool
    - Goalposts
    - Hazard assessment and controls understood by all involved
- Equipment without boom (dump truck, tractor-trailer) travelling below an energized power line:
    - Signage, flagging – HPI Tool

When a spotter is used, they must not be assigned any other tasks. The spotter must understand the hazards and controls and must have an audible means of contact with the equipment operator (e.g., radio communication, air horn).

11.10.5. Isolation and grounding

Contractors must have a project safe work plan and project grounding plan in place for any work performed inside an energized substation or involving transmission line conductors (on a power line right-of-way).

The hazards of energization and energization due to induction must be mitigated to protect workers and align with the following standards:

- ***Facility Isolations*** **(ALS-818)**: Standards and procedures used to isolate facilities and facilitate safe maintenance and construction activities on AltaLink transmission facilities under the control of the AltaLink Control Center
- ***AltaLink Equipotential Bonding and Grounding Standard*** **(ALS-2074):** Requirements for equipotential bonding and grounding and the application of portable protective grounds when working on isolated AltaLink facilities during construction, maintenance, operation and emergency repair

- ***Working on Isolated Transmission Facilities*** **(AL-ALL-90001):** Technical requirements associated with working on isolated and grounded power lines. This is an engineering standard available on the Contractor Engineering website. Contact AltaLink for access to this website.
- ***AltaLink-FortisAlberta Substation Interconnection Standard*** **(ALS-1991):** Procedures to safely install and connect FortisAlberta underground distribution power cables to AltaLink substations by clarifying operating authorities, work practices and procedures
- ***AltaLink Application Requirements of Temporary Protective Grounds*** **(ALS-2007):** Information on the sizing required for temporary protective grounds for substations and lines and substation exception list
    - The Grounding Exception Tables provide a list of substations where grounding practices other than the use of a single 2/0 TPG assembly are required

11.11. Minimum Approach Distances (MAD) and Safe Limits of Approach (LOA)

Contractors must follow AltaLink's *Limits of Approach Standard* (ALS-2099).

11.12. Minimum approach distances for HVDC

Contractors must follow AltaLink's *Limits of Approach Standard* (ALS-2099).

11.13. Low voltage work

AltaLink's *Low Voltage Safety Standard* (ALS-2047) outlines requirements for the workplace electrical safety of workers working on or in proximity to low voltage energized electrical equipment. It aims to protect workers from the hazards of electric shock and arc flash, and complements AltaLink engineering standard *AC Low Voltage Arc Flash Hazard Analysis* (AL-STN-61003), which provides for facility design that controls arc flash hazards through engineering solutions.

While AltaLink aims to reduce arc flash hazards to Level 2 or below (<8 cal cm2), this may not always be feasible. System changes can impact arc flash hazard levels, and unless these are recognized and mitigated, may increase hazards to workers. The practices outlined in the *Low Voltage Safety Standard* must be followed whenever low voltage work is being performed.

The *Low Voltage Safety Standard* impacts all workers who repair, maintain, or install equipment in proximity to low voltage apparatus and equipment and is in effect at all AltaLink facilities where low voltage (<750V) equipment exists. This standard applies to both AC and DC low voltage work.

11.14. Fencing and barricades

Where applicable, contractors must control facility access by closing and locking gates at all times or providing a suitable watch is to prevent unauthorized access. If animals are in the vicinity, the gate must be kept closed. When gates are required to be locked and crews are onsite, emergency evacuation requirements must be in place.

All excavations, trenches and openings must be properly fenced, barricaded or covered. Notices must be posted warning of the potential danger.

11.15. Radiation producing equipment

Contractors are required to have a program that protects workers from radiation as per *Alberta OH&S* Part 20 when working with equipment that poses a radiation hazard. Any area which may be affected by radiation requires radiation warning devices and signs containing the internationally recognized symbol for radiation placed around the perimeter. This includes lasers (Class 3b and Class 4 lasers) that meet the *Alberta OH&S* requirements.

When radiographic equipment is used, contractors must ensure the area is clear and all workers are a safe distance from the radiation source.

Contractors must ensure that no worker operates designated radiation equipment unless a registration certificate has been issued by an authorized radiation health registration agency or by a Director for that equipment. A copy of the certificate must be posted near the equipment, or the terms and conditions of the certificate must be communicated to workers using the equipment.

Only properly trained, qualified workers are allowed to use radiation-producing equipment or materials at AltaLink facilities. Contractors must maintain radiation equipment operation training and qualifications records.

11.16. Rigging, including chains, slings, cables, pulleys and travelers

Contractors must ensure:

- Chains, slings, cables, pulleys and travelers are applicable for the job and maintained according to the manufacturer's requirements
- Chains, slings, cables, pulleys and travelers have an identification tag attached indicating the load rating, last date tested and limitations
- Chains, slings, cables, pulleys and travelers do not exceed the assigned load rating
- Daily inspections conducted before use to look for wear, abrasions, collapse and other visible damage
- Defective/damaged chains, slings, cables, pulleys and travelers, or components are immediately removed from service
- Hooks, rings, links or coupling devices have the same or higher rating as the chain to which it is affixed – never use makeshift links or coupling devices
- Rigging fixtures such as spreader bars and crosses bear name plates clearly stating capacities for tension, compression and transverse loads (as applicable)
- Copy of the rigging fixture drawing stating technical specification, certified by a professional engineer, is readily available on site when the fixture is in use
- Tools, slings, shackles, etc. used for towing or recovery are visually marked and only used for towing or recovery

11.17. Use of explosive materials (implosive connectors)

AltaLink has discontinued the use of implosive connectors in favour of other connection options that pose a lower installation risk. Please reference AltaLink Engineering technical bulletin *AL-ALL-0068-TB*, 2016/09/07 for further details.

11.18. Mechanical equipment and motorized vehicles

Machinery, specialized equipment, and supplies used on the project by the contractor must:

- Be sufficient size, strength and design, made of suitable materials to withstand stresses imposed on it during operation, and can perform the function for which it is intended or designed
- Not exceed rated capacity or other limitations on the operation of the equipment, or any part of it as described in the manufacturer's specifications or specifications certified by a professional engineer
- Be modified in accordance with the manufacturer's specifications or specifications certified by a professional engineer so as to not affect its structural integrity or stability
- Be erected, installed, assembled, started, operated, handled, stored, serviced, tested, adjusted, calibrated, maintained, repaired and dismantled in accordance with the manufacturer's specifications or the specifications certified by a professional engineer

Licensed vehicles must be road-worthy and meet or exceed the conditions of the *Highway Traffic Act*. Contractors must equip vehicles used in general service with:

- First aid equipment that meets the requirement of *Alberta OH&S* Part 11 Schedule 2
- Fire extinguisher with current inspection records that meets the minimum rating of 2A-10BC (for moveable equipment) as per *National Fire Code – Alberta Edition*

11.19. Contractor-owned fabricated equipment

All contractor-owned, fabricated, or modified machinery and equipment used by the contractor must be operated, tested, adjusted, calibrated, maintained, repaired and dismantled in accordance with specifications certified by a professional engineer. The certification must be in writing, and stamped and signed by a professional engineer. A legible copy must be available on site when the equipment is present.

11.20. Defective power tool tagout

Contractors must have a program in place to prevent a possible injury if a defective power tool is on an AltaLink site. It must be tagged out of service following the *Lockout and Tagout Standard* (ALS-2086), so the tool is not accidentally used.

11.21. Defective mobile equipment tagout

Contractors must have a program in place to prevent a possible injury if a piece of defective mobile equipment is on an AltaLink site. It must be tagged out of service following the *Lockout and Tagout Standard* (ALS-2086), so the equipment is not accidentally used.

11.22. Cranes and lifting operations

All cranes, hoists and lifting gear equipment must be operated, tested and maintained in accordance with the manufacturers' specifications or those of a professional engineer and Part 6 *Cranes, Hoists, and Lifting Devices* of the *Alberta OH&S Code* (and standards identified therein).

Cranes and hoists must have copies of the following inside the cab:

- Crane capacity chart identifying the crane model, manufacturer, and identification number
- Crane operator manual
- Current issued certificates of inspection for all hoisting equipment that will be used for lifts

Two categories of lifts are as follows:

Standard lift: Any load hoisted where the lift process:

- Is low risk from start to completion of the lift
- Uses a single crane and does not exceed 75 per cent of its lifting capacity

Critical lift: A critical lift includes all the criteria of a standard lift, plus the following additional criteria:

- Load exceeds 75 per cent of the chart capacity
- Tandem two-crane lift, or if the work site manager declares the lift a critical lift
- Lift is within proximity to high voltage equipment and/or transmission lines
- A dedicated powerline technician must act as safety watch on site during these lifts
- Lift endangers existing facilities, the operating workplace, or the public
- Lift involves lifting workers in a platform or suspended man-basket
- For lifts greater than 75 per cent of the chart capacity, a qualified crane operator must approve the lift plan, rigging equipment, and hoisting equipment to be used

Mobile cranes are required to be operated so that no part of the crane or load enters the minimum approach distances or limits of approach from electrical power lines, except where a qualified utility employee trained and competent in Live Work uses the crane with attachments that are designed to lift energized conductors. If any part of the crane, hoist line or load is capable of encroaching upon minimum approach distance or limits of approach, a competent signal person is required at all times within view of the operator.

11.23. Suspended workers' platforms

This section refers to the use of a manufactured workers' platform that is hoisted on the load line of a crane. This does not include bucket trucks or traditional aerial work platforms.

All cranes, workers' baskets, and lifting gear must be operated, tested, and maintained in accordance with the manufacturers' specifications or those of a professional engineer and Part 6 *Cranes, Hoists, and Lifting Devices* of the *Alberta OH&S Code* (and standards identified therein). Other requirements include:

- Before using any suspended workers platform, contractors must determine if an alternative means of reaching the work-site location is available
- Cranes used to hoist workers must be equipped with a load monitoring device and an anti two-block device
- When using a suspended workers platform, the crane must not exceed 50 per cent for all components at working radius
- Suspended workers platforms are not to be used as elevating devices for convenience or be used for lifting or hoisting materials or tools

Contractors must develop a procedure for the use of suspended workers platforms that must include:

- Risk assessment for the scope of work
- Workers lift plan, which must include lift calculations
- Pre-lift meeting checklist
- Test-lift the basket for:
    - Secondary support using test weights at 125 per cent of rated platform capacity (unoccupied)
    - Primary support using test weights at 125 per cent of rated platform capacity which includes a radius check (unoccupied)
    - Primary support 30 cm off the ground for final check of all connections and rigging (occupied)

11.24. Chainsaws

Contractors must have a chainsaw program in place before starting work. The program includes verification of training, an operator skills competency evaluation, a safe work plan review with hazard identification, PPE, transportation/storage and maintenance plan.

Personal protective equipment requirements for chain saw use:

- **Eye Protection**: Safety glasses with side shields, safety goggles and face shields approved by CAN/CSA Standard Z94.3: Eye and Face Protectors or ANSI/ISEA Standard Z87.1
  NOTE: *A face shield attached to the hard hat without safety glasses does not provide adequate eye protection.*
- **Head protection**: A hard hat approved by CSA Standard Z94.1: Industrial Protective Headwear – Performance, Selection, Care and Use or ANSI Standard Z89.1 Industrial Head Protection
- **Hearing protection**: CSA Z94.2 Standard: Hearing Protection Devices, Class A or equivalent approved protection
- **Leg protection**: Le Bureau de normalization du Quebec (CAN/BNQ) 1923-450 Category A or equivalent or better protection such as Workers' Compensation Board of B.C. (WCB) PPE 1 - 1997. Protective chainsaw pants or chaps that cover from crotch to ankle in front and cover the lower leg (calf) completely must be worn. When fire resistant clothing is required, leg protection is to be worn as the outside layer.
- **Hand protection**: Leather, Kevlar or ballistic nylon gloves
- **Foot/ankle protection**: Boots meeting CAN/CSA-Z195: Protective Footwear or ASTM F2412 and ASTM F2413
  NOTE: *Footwear must cover the ankle and provide ankle support.*
- **Requirements for lines crew for chainsaw use:** When lines crews are working from a bucket and using the chainsaw, a chainsaw protective jacket is required. Adequate storage is needed for a chainsaw while working in the bucket. This includes equipment such as a holster or suspending the chainsaw using other manufactured equipment outside the bucket.

11.25. Fire prevention and firefighting equipment

Contractors must follow the requirements in *Fire Risk Work Site Prevention and Mitigation Standard* (ALS-2068) when planning and executing work on AltaLink rights-of-way or infrastructure.

11.26. Asbestos

Based on construction build date, some AltaLink facilities have been identified as containing (or having the potential to contain) asbestos in its construction materials. Facilities with known or suspected asbestos are listed in *Asbestos Release Standard and Procedure* (ALS-2057).

Contractors must ensure the requirements of the *Alberta Asbestos Abatement Manual (2019)* are followed where any type of work is done where asbestos containing products may be disturbed.

If work is to occur in a facility that has the potential to disturb asbestos, the AltaLink Project Manager must follow the identification and abatement process outlined in ALS-2057 before the work proceeds.

If it is suspected that asbestos containing products are inadvertently disturbed, the Person-in-charge of the work shall:

- Isolate the area immediately
- Report the incident to their reporting manager or designate
- Report the incident to the AltaLink project manager
- Minimize any further disturbance
- Flag off the area to prevent others from entering if suspected asbestos may be airborne

Work is not to proceed until an assessment (and abatement if required) is completed and the area is deemed safe to re-enter.

11.27. Cutting tool selection and use

Contractors must have a program to provide guidance on the proper selection, use, and maintenance of cutting tools (e.g., knives, cable strippers, etc.) and use Level 3 cut resistant gloves to be used when required. At a minimum, the program must include the following elements:

- Process to determine if a cutting tool must be used to perform the task or if the requirement for a cutting tool can be practically eliminated
- Process to determine if a cutting/shearing tool (e.g., wire cutters, cable skinner) can be used to perform the task instead of a knife
- Process to determine what type of hand protection (i.e., cut resistant) must be worn to use the cutting tool
- Determination of the key tasks performed by the organization that requires cutting tools and a determination of what cutting tool and hand protection will be used
- Guidelines for maintaining and storing tools

Box cutters or retractable knives are not to be used to strip or cut cables. When it is not suitable to use jacket skinners or wire strippers, a cable skinning knife with a fixed blade is required.

Grinders, band saws, reciprocating saws, or other powered saws must never be used to cut copper clad steel (CCS) conductor. CCS must only be cut with manual or electric ratcheting cable cutters, hydraulic or battery-operated aluminum-conductor steel-reinforced (ACSR) cable cutters, non-insulated cable cutters, or bolt cutters.

Knives with segmented blades (i.e., breakaway knife blades) are not to be used on AltaLink worksites.

11.28. Off-road vehicle use

Contractors must follow AltaLink's *Off-Road Vehicle Standard* (ALS-2060).

11.29. Power mobile equipment

Contractors must have a program in place for the safe use and operation of powered mobile equipment that complies with *Alberta OH&S* Part 19.

11.30. HVDC converter stations auxiliary systems

HVDC converter stations have a variety of auxiliary equipment not under the direction and control of the ACC. There are unique sources of energy at the HVDC sites not typically found at the other substations. This requires lock out and tag out (LOTO) procedures to be in place to manage the control of hazardous energy for these systems.

The HVDC facilities are also equipped with Kirk Key safety interlocking systems and Bay Control Units, which have interlocking bypass capabilities. HVDC operation technologists can issue auxiliary locks to auxiliary workers or contractors who do not have their own personal locks when they are working on auxiliary equipment.

If you are completing auxiliary work at one of the HVDC substations, you must follow *Lockout and Tagout (LOTO) Standard* (ALS-2086).

NOTE: *Certain areas may have procedures specific to equipment isolation.*

11.31. Hantavirus hazards

The following risks are associated with hantavirus:

- Humans can contract Hantavirus when there is contact with deer mice or other rodents nest areas, droppings, body fluids, and surrounding dusts or soils harboring hantavirus
- Hantavirus pulmonary syndrome (HPS) produces a flu-like illness with fever, sore muscles, headaches, nausea, vomiting, a shortage of breath, and can be fatal in 50 per cent of cases
- Symptoms may appear from five to forty-five days after exposure to the virus

Contractors must have a program in place that identifies the hazards, reduces the risks of workers being in contact with hantavirus, and provides a safe procedure for clean-up.

11.32. Critical tools

Contractors are required to have their own procedure(s) for defining, identifying, purchasing and the management of critical tools to ensure a safe and consistent approach with the applicable codes and standards. The procedure(s) also needs to include inspection, certification, testing, repair, maintenance and recordkeeping of critical tools.

12. SITE SECURITY

Contractors must ensure that:

- where practicable, site access is controlled by ensuring gates are closed and locked at all times or a suitable watch is provided to prevent unauthorized access
- if animals are in the vicinity, gates must be kept closed
- if continuous access is required, the gate must be secured to prevent damage and must be closed and pinned as a minimum during periods of inactivity
- all targets of theft/vandalism from the site or approval obtained from AltaLink to maintain items
- adequate site security is in place for all projects

13. MEETINGS AND INSPECTIONS

13.1. Health and safety meetings

At a minimum, formal safety meetings must be completed with all workers once per month.

13.2. Formal inspections and audits

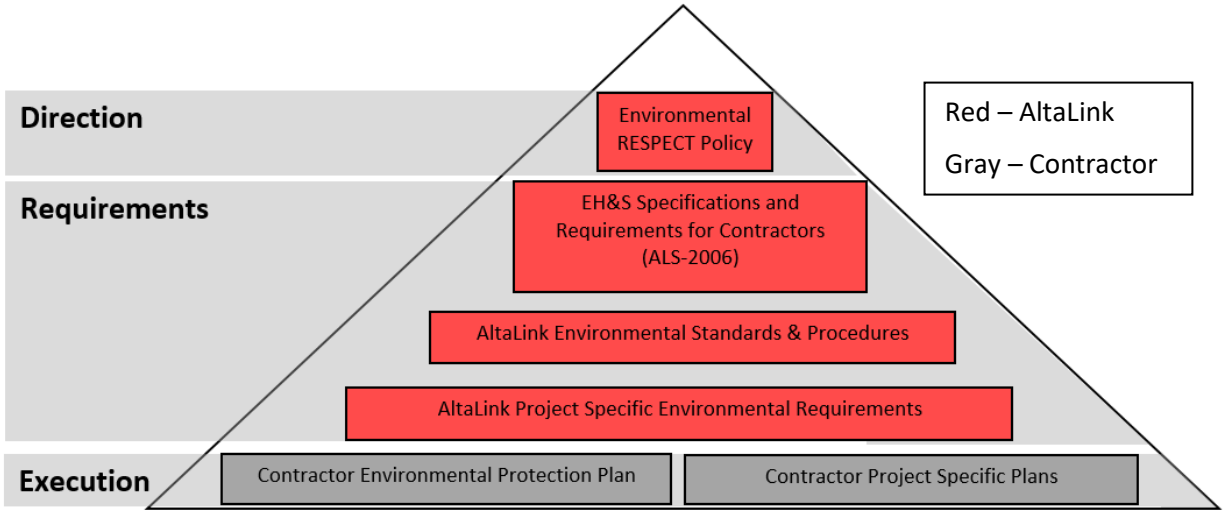
Health and safety worksite inspections must be performed and documented daily with a focus on the health and safety aspects of worker activities and site conditions. Documentation must include conditions that require corrective actions and an implementation plan.

13.3. Environment, Health, & Safety Management System audit

AltaLink reserves the right to perform formal environment, health and safety audit(s) of contractor work activities. The scope of these audits cover compliance with the agreed environment, health, and safety management plans, policies, procedures, practices and with the governing laws and regulations.

14. CONTRACTOR ENVIRONMENTAL REQUIREMENTS

AltaLink's commitment to managing environmental performance is demonstrated throughout the organization – from the *Environmental RESPECT Policy* to the environmental standards, procedures and requirements used to direct and execute work activities.



The purpose of this section is to provide an overview of AltaLink's general and *Project Specific Environmental Requirements (AL-ENV-6015)* for contractors.

AltaLink requires all contractors to develop an Environmental Protection Plan (EPP) specific to the work they complete for AltaLink. The EPP must detail how contractors will address the requirements outlined in the remainder of *section 14* below. All contractors are required to submit an EPP in ComplyWorks each calendar year, prior to January 31.

14.1. AltaLink's Environmental RESPECT Policy

Contractor environmental performance is critical in ensuring AltaLink meets its commitment to protect the environment. All contractors must be knowledgeable about AltaLink's Environmental RESPECT policy. Contractors must be responsible and accountable for understanding and incorporating environmental requirements into their daily work activities. AltaLink's Environmental RESPECT policy can be viewed on AltaLink's website (www.AltaLink.ca) and the Contractor Safety Site.

14.2. Legal and other requirements

It is the contractor's responsibility to know, understand and comply with all applicable federal, provincial, and municipal environmental laws, regulations, approvals or permits, and requirements related to the scope of work.

AltaLink's environmental standards identify the applicable legal and other requirements that apply to the construction and operation of AltaLink's electrical infrastructure. Environmental standards apply to both employees and contractors.

14.3. Competence and awareness

Contractors must be technically competent to perform work and understand applicable environmental requirements, responsibilities, and industry best practices. Contractors must also ensure subcontractors understand their environmental responsibilities and are competent to perform work.

Project-specific environmental requirements must be communicated to onsite contractors and subcontractors. Documentation of environmental orientation must be retained and provided to AltaLink Environment upon request.

14.4. Environmental incidents

All environmental incidents and near misses must be reported to AltaLink and investigated as outlined in Section 4 *Incident management.*

14.5. Project-specific environmental requirements

AltaLink may provide contractors with *Project-Specific Environmental Requirements* in the tender documents. The *Project-Specific Environmental Requirements* will identify:

- Project-specific permits, approvals, authorizations or notifications that are required
- Any project-specific commitment, and mitigations to be implemented
- The Project-Specific Plan(s) the contractor is required to have developed by a qualified environmental professional
    - Unless otherwise indicated, the plans must be developed, signed, and submitted to AltaLink Environment 14 days before the construction readiness meeting or stage gate (See section 14.6)
- Records that must be returned to AltaLink

AltaLink will revise the *Project-Specific Environmental Requirements* based on additional requirements from regulators, receipt of new approvals, notifications, or authorizations, and additional project specific environmental assessments. Revisions will be communicated with the contractor.

14.6. Project-specific plans

Contractors are required to develop Project-Specific Plans based on the AltaLink provided *Project-Specific Environmental Requirements*. Unless otherwise indicated, these plans must be developed and signed by a qualified environmental professional 14 days before the construction readiness meeting or stage gate.

14.7. Records

The contractor must submit all required records to the AltaLink environmental advisor upon completion of the project, or as requested by AltaLink.

14.8. Environmental monitoring and inspections

Contractors may be required to develop an environmental monitoring plan as identified in the *Project-Specific Environmental Requirements*.

AltaLink Environment will conduct periodic inspections to monitor conformance with AltaLink requirements and compliance with legal and other requirements. The outcome of the inspection will be distributed to both the contractor and AltaLink leadership. Contractors are required to address any corrective actions specified, in the inspection report.

14.9. Environmental standards and procedures

The following section outlines AltaLink's environmental standards and procedures. Environmental standards apply to all AltaLink employees and contractors. Some environmental procedures may only apply to AltaLink employees; however, as indicated in the following sections, they have been provided to contractors for reference.

There may be additional applicable vegetation management or engineering standards that contain environment content as detailed in the project tender documents and/or design-based memorandum.

14.9.1. Greenhouse gases (SF_6, CF_4, RF10A, R22)

AltaLink uses several greenhouses gases in both electrical equipment (SF_6 and CF_4) and the operation and maintenance of HVAC systems (RF10A and R22). Due to the high global warming potential of these gases, all necessary measures and precautions must be taken to prevent releases. There may also be safety concerns with exposure to these gases and/or their residue.

All SF_6 cylinders used for pressurizing new equipment must be returned to the manufacturer or gas supplier. AltaLink requires confirmation that cylinders have been returned. Please see the following documents for reference purposes:

- AL-ENV-6002: SF_6 *Gas Reporting Standard*
- ALF-STN-1025: SF_6 *Gas Handling Procedure*
- ALF-STN-1025F1: *Emissions from In-Service Equipment*
- ALF-STN-1025F2: *Emissions from Decommissions and Failed Equipment*

14.9.2. Wildlife

Contractors shall be aware of the potential impacts their activities may have on wildlife or wildlife habitat. Depending on the location and timing of work activity, consultation may be required with AltaLink environment. Refer to:

- AL-ENV-6005: *Wildlife Standard*
- AL-ENV-6006: *Wildlife Procedure*
- AL-ENV-6006F1: *Nesting Behaviour Search Data Sheet*
- ALS-2009F5: *Wildlife Mortality or Injury Report Form*

14.9.3. Oil filled equipment and PCB management

Contractors who handle insulating oil or in-service oil filled equipment must take necessary measures and precautions to prevent releasing any PCB oil into the environment. There are specific requirements for the maintenance, storage, transportation, recycling and disposal of PCB-contaminated electrical equipment, equipment components and oil. Refer to:

- AL-ENV-2003: *PCB Contaminated Electrical Equipment Handling Standard*
- ALF-STN-1015: *PCB Contaminated Oil and Equipment Handling Procedure*

14.9.4. Soil handling

Contractors are required to follow AltaLink's requirements for the handling, on site re-use, and offsite disposal of soils. Refer to AL-ENV-6011: *Soil Handling Standard and Procedure.*

14.9.5. Clubroot

Clubroot is a soil-borne disease that infects the root system of plants in the Brassicaceae family (e.g. canola). Clubroot can be spread by the introduction of the diseases from an infested area through improperly cleaned vehicles and equipment. Contractors are required to understand how to prevent the transfer of the disease. Refer to:

- AL-ENV-2000: *Clubroot Standard*
- AL-ENV-2001: *Clubroot Procedure*
- AL-ENV-2001F1: *Recommended Questions for Land Managers Owners Occupants*
- AL-ENV-2001F2: *Cleaning Logs*

14.9.6. Temporary access

Temporary access associated with construction and operations activities can negatively affect soil and vegetation. AltaLink has specific criteria in which temporary access or work activities must be modified or suspended. Refer to:

- AL-ENV-6007: *Temporary Access Standard*

14.9.7. Work in and around water bodies

Contractors shall ensure all applicable notifications, approvals, authorization, and mitigation plans are in place and adhered to prior to commencing activities in and around water bodies. Refer to:

- AL-ENV-6003: *Work in and Around Water Standard*
- AL-ENV-6004: *Work in and Around Water Procedure*

14.9.8. Historical resources

AltaLink is required to secure a *Historical Resources Act* approval prior to the start of work activities. Contractors are required to understand their requirements with the *Historical Resources Act* and comply with applicable approval conditions. Refer to AL-ENV-6016: *Historical Resources Standard*.

14.9.9. Waste and recyclables management

Contractors are required to appropriately manage all waste and recyclable materials on their worksites. All contractors who generate waste or recyclables are required to develop a Waste and Recyclables Management Plan which identifies the anticipated waste and recyclables streams, authorized waste vendor and receiving facility. Contractors are also required to report on the wastes and recyclables generated from the Project. Refer to:

- AL-ENV-6009: *Waste Standard and Procedure*
- AL-ENV-6009F1: *Waste and Recyclables Management Plan*
- AL-ENV-6009F2*: Waste Reporting Form*

14.9.10. Spill prevention and response

Contractors, who manage, handle, store or transport oil, fuel or other hazardous materials are required to develop a Spill Prevention and Response Plan, appropriate to their work activities. The Spill Prevention and Response Plan must describe appropriate spill prevention and response procedures so environmental emergencies are addressed in accordance with applicable legislation and best management practices to facilitate a safe, quick, and effective response and thus, minimize adverse effects to terrestrial and aquatic environments. Refer to:

- AL-ENV-6001: *Spill Prevention and Response Standard*
- AL-ENV-6001F1: *Spill Prevention and Response Plan*
- ALS-2009F6: *Spill Report Form*

14.9.11. Reclamation

Land disturbed by construction, operation, or maintenance of AltaLink infrastructure must be reclaimed to mitigate potential adverse effects, comply with regulatory requirements, and maintain positive relations with stakeholders. Contractors must understand AltaLink's requirements for planning, implementing, and monitoring reclamation and incorporate these requirements into their work plans. Refer to:

- AL-ENV-6013: *Reclamation Standard*
- AL-ENV-6014: *Reclamation Procedure*
- AL-ENV-6014F1: *Reclamation Documentation*

15. TERMS AND DEFINITIONS

AltaLink Control Centre (ACC): Operating authority for AltaLink functional facilities. The ACC directs all switching for isolating energized facilities and issues all guarantee of isolations or advices for work on AltaLink facilities.

Construction authorization: Project Manager-issued authorization, enabling construction work to commence. All construction work performed on the project occurs under the construction authorization. At the completion of the project the construction authorization is returned back to the project manager.

Construction manager: Construction authority for new, electrically isolated, facilities or additions to existing functional facilities. A construction manager will become the operating authority for facilities inside the open points of any construction isolation issued to them by Outage Scheduling

Construction isolation: Provides isolation from the system including transfer of potential from system faults. Isolation or open points for construction isolation shall not be switchable devices. Construction isolation zones may include conductors such as distribution neutrals, optical ground wires, and overhead shield wires, not just phase conductors.

Contractor: Unless otherwise specified, refers to both contractors and sub-contractors.

First aid incident: Occupational injury/illness that requires first aid treatment only and does not result in loss of time from work.

Functional facility: AltaLink substations, telecom sites, and transmission lines connected to the system

Ground disturbance: Any work or activity that results in a disturbance of the earth, including excavating, digging, tunneling, auguring, backfilling, blasting, topsoil stripping, and land levelling. This also includes setting poles, pile driving, ground rod driving, and other similar activities.

Guarantee of Isolation (GOI): Electrical isolation from all system sources via open points and/or switchable devices.

Medical aid incident: A classification of occupational injury/illness for medical treatment beyond first aid injury where there have been no lost days. The following are not considered medical treatment injuries:

- Visit(s) to a healthcare provider limited to observation or counseling or prescribed restricted work
- Diagnostic procedures (e.g., x-rays, blood tests), including the use of prescription medications solely for diagnostic purposes (e.g., eye drops to dilate pupils)

Near miss incident: Unplanned event that did not result in injury, illness, damage or environmental impact but had the potential to do so. A near miss incident has a release of energy that had the potential to cause a serious injury, incident, impact or loss.

Non-conformance: Performed activity that does not follow AltaLink standards, procedures, or project specific environmental requirements**.**

Non-compliance: Performed activity that does not fulfil the conditions of provincial or federal regulations, legislation, or approvals**.**

Occupational injury/illness: Any injury/illness that is not recorded as a fatality, lost-time injury, medical aid, or restricted work incident, but has been medically diagnosed and determined to be work-related and the cause is verified trauma or workplace exposure. Examples include punctured eardrums, and fractured or cracked bones.

Person-in-charge (PIC): Person-in-charge is responsible for coordinating the site from a safety and reliability perspective. This entails authorizing others to perform work and issuing work permits to independent work groups if appropriately qualified. When performing electrical utility work, the PIC must be a qualified utility worker, as per Part 40 of the *Alberta OH&S Code*. **NOTE:** *The person-in-charge is not responsible for the safety of a worker the person-in-charge authorizes to enter a site. Work leaders of each work group are responsible for the safety of their workers.*

Qualified environmental professional: Scientist or technologist specializing in a relevant applied science or technology discipline including, but not limited to agrology, forestry, biology, engineering, geomorphology, geology, hydrology or hydrogeology and registered in Alberta with an appropriate professional organization and who, through demonstrated suitable education, current experience, and detailed knowledge relevant to their particular discipline, may be reasonably relied upon to provide advice and develop plans within their area of expertise.

Restricted work: When an employee, due to a work-related injury/illness, is medically determined to be unable to perform one or more routine functions or unable to work the normal time period of their pre-injury/illness workday, they are working in a “restricted” capacity.

Safety meeting: Formal site safety meeting held at minimum monthly involving all workers and management on site.

Significant near miss: Unplanned event that had a high potential for a serious consequence and is classified using the Safety Classification and Learning (SCL) model.

Species-at-risk: Include threatened or endangered species as per the provincial *Wildlife Act* and federal *Species at Risk Act*.

Tailboard meeting: Safety meeting held each day on the worksite that covers work tasks of the day. It includes a review of the work plan with a discussion on the inherent hazards and the required safety mitigation. All workers involved in the tasks to be performed must be in attendance.

Work permit: Documented authorization the site person-in-charge or isolation holder issues for workers to commence work and which is required prior to performing work on AltaLink functional facilities. It is a tool for work coordination and is issued when more than one work crew is on a site.

16. RELATED DOCUMENTS AND GOVERNMENT REGULATIONS

16.1. Government legislation

Provincial

- Historical Resources Act
- National Fire Code – Alberta Edition
- Occupational Health & Safety Act, Regulation and Code
- Tobacco, Smoking and Vaping Reduction Act and Regulation
- Wildlife Act

Federal

- Canadian Aviation Regulations (CARS)
- Species at Risk Act
- Transportation of Dangerous Goods Act

16.2. Reference material and external standards

- Alberta Asbestos Abatement Manual (2019)
- ANSI/IESA 787.1 – Occupational and Educational Personal Eye and Face Protection Devices
- ANSI/ISEA 789.1 – Industrial Head Protection
- ASTM F2412 – Standard Test Methods for Foot Protection
- ASTM F2413 – Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear
- CSA Group Z94.1 – Industrial protective headwear – Performance, selection, care, and use
- CSA Group Z94.3 – Eye and face protectors
- CSA Group Z195 – Protective footwear
- CAN/ULC S801 *Standard on Electric Utility Workplace Electrical Safety for Generation, Transmission, and Distribution*

16.3. AltaLink standards, procedures and forms

The following documents are references within this standard and they are located on AltaLink's Contractor Safety website. To gain access to the Contractor Safety website, send a request to healthandsafetyadministrator@altalink.ca.

Number	Document name
Health and safety standards	
ALS-2079	Aerial Patrol Standard
ALS-2081	Aerial Worker Transportation Standard
ALS-2026	Alcohol and Drug Standard for Contractors
ALS-2007	AltaLink Application Requirements of Temporary Protective Grounds
ALS-1081	AltaLink Corporate Health and Safety Policy
ALS-818	AltaLink Facility Isolation
ALS-1991	AltaLink-Fortis Substation Interconnection Standard
ALS-1717	AltaLink Safety Certification Standard
ALS-2074	Equipotential Bonding & Grounding Standard
ALS-1994	Field Reliability Work Practices Standard
ALS-2068	Fire Risk Worksite Prevention and Mitigation Standard
ALS-2058	Flight Planning and Scheduling Standard
ALS-2084	Helicopter Flight Log
ALS-2088	Helicopter Human External Cargo, Structure Transfers, and Platform Standard
ALS-2078	Helicopter Material and Tool Transportation Standard
ALS-2030	Live Work Standard
ALS-2086	Lockout and Tagout (LOTO) Standard
ALS-2047	Low Voltage Safety Standard
ALS-1942	Obtaining Certification in Switching, Grounding and Isolations Standard
ALS-2012	Prime Contractor Standard
ALS-2062	STARS Vigilant Site Identification Numbers for Temporary and Permanent Sites Standard
Health and safety forms	
ALS-1942F7	Accepting Isolations in Substations
ALS-1717F1 to F10	AltaLink Safety Certification Forms
ALS-2058F1	Flight Note Request Form
ALS-2088F	Helicopter Human Cargo Acceptance Form
ALS-2078F	Helicopter Material and Tool Transportation and Work Acceptance Form
ALS-2078F1	Helicopter Material and Tool Transportation Checklist
ALS-2030F	Live Work Acceptance Form
ALS-1942F1 to F10	Obtaining Certification in Switching, Grounding, and Isolations Forms
Environment standards and procedures	
	AltaLink Environmental RESPECT Policy
AL-ENV-2000	Clubroot Standard
AL-ENV-2001	Clubroot Procedure
AL-ENV-6016	Historical Resources Standard
AL-ENV-2003	PCB Contaminated Oil Filled Equipment Handling Procedure
AL-ENV-6014	Reclamation Procedure

AL-ENV-6013	Reclamation Standard
AL-ENV-6002	SF_6 Gas Reporting Procedure
AL-ENV-6011	Soil Handling Standard and Procedure
AL-ENV-6001	Spill Prevention and Response Standard
AL-ENV-6007	Temporary Access Standard
AL-ENV-6008	Temporary Access Procedure
AL-ENV-6009	Waste Standard and Procedure
AL-ENV-6005	Wildlife Standard
AL-ENV-6006	Wildlife Procedure
AL-ENV-6003	Work in and Around Water Standard
AL-ENV-6004	Work in and Around Water Procedure
Environment forms	
AL-ENV-2001F2	Cleaning Logs
AL-ENV-6006F1	Nesting Behaviour Search Data Sheet
AL-ENV-6014F1	Reclamation Documentation
AL-ENV-2001F1	Recommended Questions for Land Managers Owners Occupants
AL-ENV-6001F1	Spill Prevention and Response Plan
ALS-2009F6	Spill Report Form
AL-ENV-6009F1	Waste and Recyclables Management Plan
AL-ENV-6009F2	Waste Reporting Form
ALS-2009F5	Wildlife Mortality or Injury Report Form
Field Operation procedures	
ALF-STN-1025F1	Emissions from In-service Equipment
ALF-STN-1025F2	Emissions from Decommissions and Failed Equipment
ALF-STN-1015	PCB Contaminated Oil and Equipment Handling Procedure
ALF-STN-1025	SF_6 Gas Handling Procedure
Engineering standards	
AL-ALL-20001	Sizing and Application of Temporary Grounds

APPENDIX A

GENERAL ALTALINK RELEASE REPORTING REQUIREMENTS					
Product/Substance		**Near Miss**		**Environmental Incident**	
		Class 1	**Class 2**	**Class 1**	**Class 2 (Regulatory Reportable)**
Any product/substance that when released may cause, is causing or has caused an adverse effect to the environment					> Any amount
Any product/substance released to a surface water body (including a wetland or watercourse) or groundwater					> Any amount
PCBs:	**Electric insulating oil (PCB ≥ 2 ppm) in-service**[1]	< 5 liters	≥ 0.75 gram PCB equivalent (cumulating)	≥ 5 liters	≥ 1 gram PCB equivalent (cumulating)
	Electric insulating oil (PCB ≥ 2 ppm) not in-service[2]				Any amount
	Equipment and solids (PCB ≥ 50 ppm) not in-service[3]				Any amount
Electrical insulating oil (PCB <2ppm)		< 5 liters		≥ 5 liters	≥ 200 liters[3]
Flammable liquids (e.g. gasoline, diesel, Jet A/B)					
Hydraulic oil					
Herbicides					
Antifreeze					
Battery acid				> 0 liters	≥ 5 liters
Greenhouse gases (i.e., refrigerants, SF6, CF4)				< 10 kg or < sustained 10 minute release	≥ 10 kg or ≥ sustained 10 min release

[1] In-service (in-use) – Equipment and its associated products that are being processed daily and used for the purposes for which it was manufactured. This includes emergency back-up equipment located at AltaLink facilities.

[2] Not in-service (not in-use) – Equipment and products stored for future use, or equipment being stored pending disposal.

[3] VP EH&S has final discretion over whether the release is having or could have an adverse effect to the environment, and therefore whether it is regulatory reportable or not.

RELEASE REPORTING REQUIREMENTS DURING THE TRANSPORTATION OF DANGEROUS GOODS				
Product/Substance	**Near Miss**		**Environmental Incident**	
	Class 1	**Class 2**	**Class 1**	**Class 2 (Regulatory Reportable)**
Any release or anticipated release that results in: the death of a person, the treatment of a person's injuries by a health care professional, an evacuation or shelter in place or the closure of a facility, road, main railway line.				> Any amount
Class 1, packing group II Explosives (e.g., detonators, charges)	Less than 5 litres		≥ 5 liters	Any quantity that endangers or could endanger public safety
Class 2 Gases (e.g. propane, SF_6, CF4)				
Class 3, packing group II Flammable liquids (e.g. gasoline)				
Class 6.1, packing group I or II Toxic substances (e.g. pesticides)				
Class 8, packing group I or II Corrosives (e.g. battery fluid)				
Class 3, packing group III Flammable liquids (e.g. diesel)	Less than 5 litres		≥ 5 liters	≥ 30 liters or kg, and the release endangers or could endanger public safety
Class 6.1, packing group III Toxic substances (e.g. pesticides)				
Class 8, packing group III Corrosives (e.g. electric storage batteries)				
Class 9 Miscellaneous (e.g. PCB ≥50 ppm)				