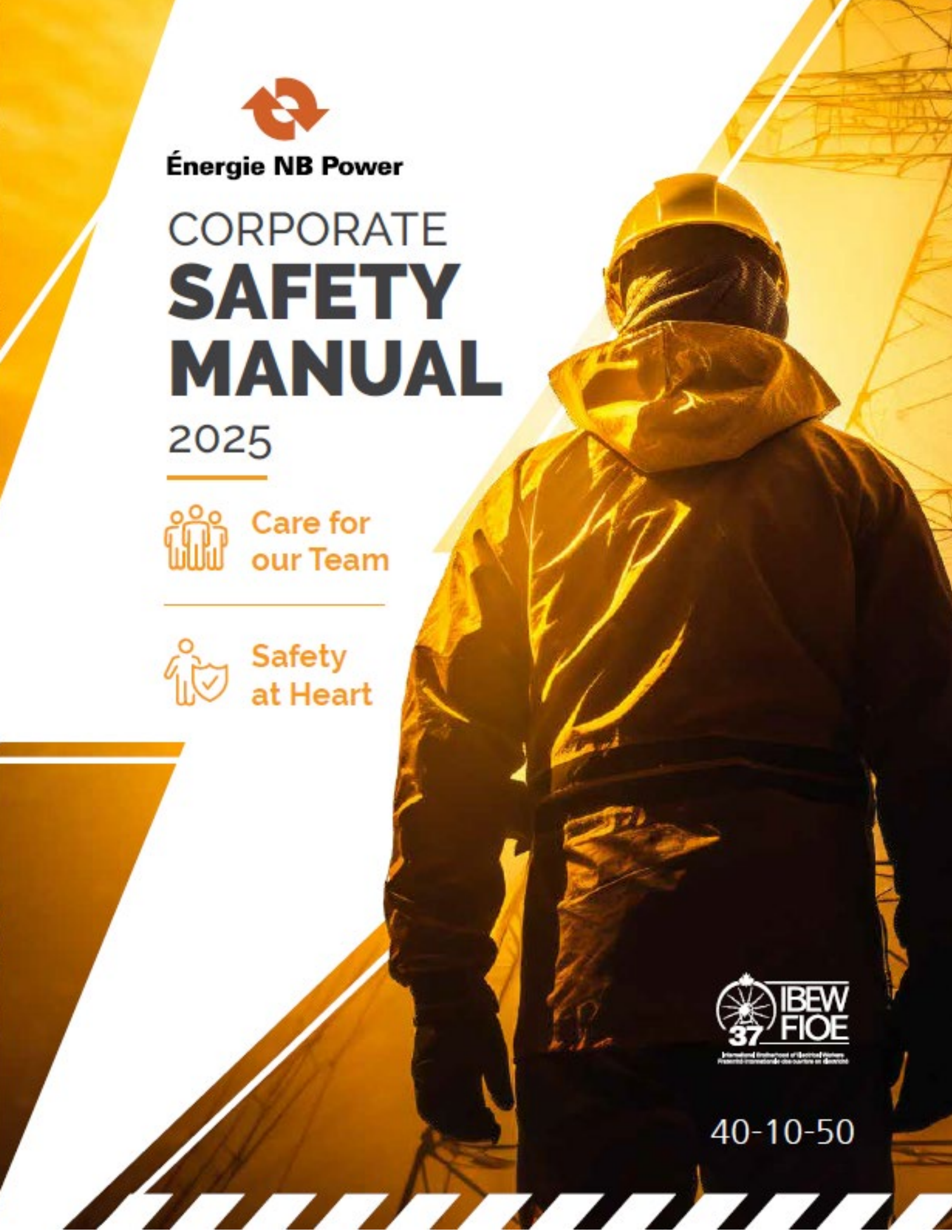
Énergie NB Power

CORPORATE SAFETY MANUAL

2025

Care for our Team

Safety at Heart



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NOTE:

All amendments to rules are printed in **BOLD** and *ITALIC*

GENERAL STATEMENT: THIS CORPORATE SAFETY MANUAL DOES NOT REPLACE THE INTERNAL PROCEDURES, STANDARDS OR WORK METHODS THAT THE DIVISIONS HAVE IN PLACE. DIVISIONS WITH INTERNAL DOCUMENTS MUST MEET OR EXCEED THE CORPORATE HEALTH & SAFETY STANDARDS.

"Four Steps to Safety"

1. Size up the job
2. Spot the hazards
3. Control the hazards
4. Carry out the plan

NOTICE

Note: Please refer to HR-33 NB Power's Health & Safety Policy for additional information.

Corporate Safety Manual Review Team

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FOREWORD

There is nothing more important than keeping our employees safe and healthy.

Safety at Heart and **Care for our Team** are two of the core values highlighted in our strategic plan that link directly to a healthy safety culture – something each of us plays a vital role in.

Putting safety first in everything we do is essential for keeping each other safe and well at work and at home. We do this by committing to plan safety into our work, follow the rules, being a leader in safety, report so we can all get better, have courage and saying no to unsafe work.

The Corporate Safety Manual is the most used safety document in NB Power's safety management system. When used in conjunction with appropriate controls, operating procedures, safety training and required personal protective equipment, this manual provides us with information to help us be safe at work.

Every employee, regardless of title, is responsible for their own safety and the safety of co-workers. We must all be leaders in safety. If you have a safety concern, please follow the escalation process and discuss your concern with your supervisor so they have an opportunity to address it right away. Urgent safety concerns must be addressed immediately!

I'd like to thank the cross-functional group of employees who reviewed the submissions made by employees and provided input to the revised manual. Your efforts are so important for keeping Safety at Heart – we couldn't do it without you.

Please take time to review this manual with your team and discuss your personal commitment to safety. It is up to each and every employee to make NB Power the safest place to work.

Lori Clark
President & CEO
NB Power

OUR VALUES

Safety at Heart

We are committed to the safety of every employee and member of the public through:

- ***planning safety into the work***
- ***following the rules***
- ***being a leader in safety***
- ***reporting so we can all get better***
- ***having courage***
- ***saying no to unsafe work***

Care for our Team

We care for our team. we are open, honest and transparent with each other to build trust. We embrace diversity, creating an inclusive culture that supports employee well-being, encourages continuous learning and drives high performance.

DUTIES

The New Brunswick Occupational Health and Safety Act mandates specific duties for various groups and individuals involved in the New Brunswick workplace. Specifically, these duties are summarized as follows:

EMPLOYER

Every employer shall

a) take every reasonable precaution to ensure the health and safety of their employees;

b) comply with the New Brunswick Occupational Health & Safety Act, Chapter O-0.2 (the Act), the regulations and any order made in accordance with the Act or the regulations;

c) ensure that their employees comply with the Act, the regulations and any order made in accordance with the Act or the regulations;

d) ensure that their employees comply with all applicable NB Power safety rules, policies and standards;

e) ensure that the place of employment is inspected at least once a month to identify any risks to the health and safety of employees;

f) acquaint an employee with any hazard in connection with the use, handling, storage, disposal and transport of any tool, equipment, machine, device or biological, chemical or physical agent; provide the information that is necessary to ensure an employee's health and safety; provide the instruction that is necessary to ensure an employee's health and safety;

g) ensure that work at the place of employment is competently supervised and that supervisors have sufficient knowledge with respect to matters that are within the scope of the supervisor's duties.

h) provide and maintain in good condition such protective equipment as is required by regulation and ensure that such equipment is used by employees during work;

i) co-operate with a committee, where such a committee has been established, a health and safety representative, where such a representative has been elected or designated, and with any person responsible for the enforcement of this Act and the regulations.

CONTRACTOR

Every contractor and sub-contractor shall:

a) comply with the ***OHS*** Act, the regulations and any order made in accordance with the Act or the regulations.

b) ***for every project site for which the contractor or sub-contractor, as the case may be, is responsible, take every reasonable precaution to ensure the health and safety of any person having access to such project site.*** Comply with all applicable NB Power safety rules, policies and standards.

c) contractors must comply with HSEE-03-19 Contractor Safety Management.

d) contractors can access NB Power Health and Safety Standards, Forms and WELL sheets at NBPower.com under Safety, Contractor Resources.

CONTRACTING EMPLOYER

Every contracting employer:

a) ***a contracting employer who directs the activities of one or more employers involved in work at a place of employment shall ensure, as far as is reasonably practicable to so do, that each employer complies with this Act and the regulations in respect of that place of employment.***

b) shall comply with the Act, the regulations and any order made in accordance with the ***OHS*** Act or the regulations.

c) shall comply with all applicable NB Power safety rules, policies and standards.

EMPLOYEE

Every employee shall

a) comply with the ***OHS*** Act, the regulations and any order made in accordance with the Act or the regulations.

b) conduct himself/herself to ensure their own health and safety and that of other people at or near their place of employment.

c) report to the employer the existence of any hazards at the place of employment of which he/she is aware.

d) wear or use such protective equipment as is required by the Act, regulations and all applicable NB Power safety rules, policies and standards.

e) consult and co-operate with the Joint Health & Safety Committee,

f) co-operate with any person responsible for the enforcement of the OHS Act and regulations.

SUPERVISOR

Every Supervisor shall:

a) take every reasonable precaution to ensure the health and safety of the employees who work under the supervisor's supervision and direction;

b) comply with this Act, the regulations and any order made in accordance with this Act or the regulations;

c) ensure that the employees under the supervisor's supervision and direction comply with this Act, the regulations and any order made in accordance with this Act or the regulations; and

d) co-operate with

(i) a committee, if a committee has been established,
(ii) a health and safety representative, if a representative has been elected or designated, and
(iii) any person responsible for the enforcement of this Act and the regulations.

e) acquaint the employees under the supervisor's supervision and direction with any hazard in connection with the use, handling, storage, disposal and transport of any tool, equipment, machine, device, or biological, chemical or physical agent;

f) provide the information that is necessary to ensure the health and safety of the employees under the supervisor's supervision and direction; and

g) every employee in a supervisory role (those who directs the work of others such as, lead, foreman, senior) must have the Competency in Safety course.

SECTION 1 – SAFETY AWARENESS

1.1 GENERAL RULE

When risks arising out of, or in connection with the work assigned, NB Power employees and contractors shall refer and adhere to Corporate Health and Safety Standards, Standard Work Methods, Standard Construction Practices, Standard Operating Practices, In-Plant Procedures, General Rules and Operating Regulations, Regulation 91-191 under the New Brunswick Occupational Health and Safety Act, the Occupational Health and Safety Act (Chapter O-0.2) and any other legislation that may apply.

1.2 DUE DILIGENCE

To meet or exceed the legislative requirements, we must ensure:

- Employers and employees must understand the ***internal*** standards/ work methods, procedures before work begins
- Employers must monitor and enforce compliance with the safety rules,
- Employees must be adequately trained ***and competent*** on the task being performed,
- Employees must understand hazards and how to mitigate/ control them,
- Supervision must provide oversight to ensure employees are working safely,
- Employees must understand their rights and supervisors support those rights,
- Inspections must be completed on equipment, vehicles and buildings.

1.3 FIT FOR DUTY

When workers feel they might be unable to perform their work safely (e.g., fatigue, distress, distraction, feeling unwell), they are to inform their supervisor.

To increase the level of consciousness for the required task requires one to be mindful of the job requirements. Deliberately paying attention in a specific manner to your present environment, which includes the job and its requirements, the physical work environment, your co-worker's, and your own state of mind.

The concept of 40-10-50 simply put, it is a ratio of where our conscious thought on average is focused: 40% on past events, 50% on the future, thus leaving only 10% of one's conscious attention on the present moment. From a safety perspective, 10% of our attention on the task at hand is not good enough, especially in high risk jobs.

1.4 HUMAN PERFORMANCE

In Human Performance, a distinction must be drawn between an event or incidents that has occurred, from the error that led to the event or incident. Humans are fallible and errors will always occur. The goal of human performance is to reduce errors that lead to accidents and events. To this end Human Performance is a set of tools and education to equip leadership, individuals and organizations in error prevention.

The purposes of Safety Rules vs Human Performance. General safety rules protect the individual from the equipment while human performance tools protect the equipment from the individual. Safety Rules and Human Performance Tools are however interconnected. The mitigation of hazards by the use of PPE, work permits, barriers and other safety practices are generally already covered under the conventional hazard discussion in the Tailboard / Pre-Job Brief. A Peer Check by another worker may remind an individual, for example, that they forgot hearing protection.

1.5 RESPONSIBILITY FOR SAFETY

Every person has the right to a safe work environment. New Brunswick's Occupational Health and Safety Act is based on the internal responsibility system (IRS).

Responsibility for safety lies with the employer, the contractor, the subcontractor, and the employee. ***Everyone has the responsibility to stop work if they see an unsafe act or condition.***

Everyone is responsible for their personal safety and that of their fellow workers, by adhering to all safety rules, approved standard work methods, standard construction practices, in-plant procedures and by using proper personal protective equipment.

The next level of supervision or management shall be responsible to assign tasks and ensure employees are competent to carry out those tasks.

1.6 REPORTING OF INCIDENTS INCLUDING SUBSTANDARD ACTS AND CONDITIONS AND OCCUPATIONAL ILLNESSES

1. Employees shall report to their supervisor any unsafe act or condition which comes to their attention by following the incident notification process and complete the appropriate reporting e-form.

2. Serious injuries, minor injuries with high likelihood for serious injury, all electrical contacts or near misses with the potential of serious injury to employees, contractors or members of the public shall result in immediate notification of the ***Total*** Health and Safety Department as well as other appropriate NB Power departments and outside agencies in accordance with the incident notification process ***See Appendix 9.4 Responsibilities.***

3. ***Notify WorkSafeNB IMMEDIATELY at 1 800 999-9775 to report the following:***

   - A loss of consciousness
   - Amputations
   - Fractures (other than fingers or toes)
   - Burns requiring medical attention beyond first aid treatment
   - Loss of vision in one or both eyes
   - Deep lacerations requiring medical attention beyond first aid treatment
   - Worker admission to a hospital as an in-patient
   - Fatalities

   Other incidents must be reported when:
   - ***They were not anticipated,***
   - ***They were anticipated and workplace control measures were not in place***
   - ***They were anticipated and the control measures in place failed to protect all workers:***
   - ***Accidental explosion***
   - ***Reporting not required for controlled explosions (i.e. blasting)***

   Catastrophic event
   I.E. underground and above-ground utility strikes, temporary construction support system collapse, a major release of a hazardous substance, fire with a potential of injuries to workers, etc.

   Catastrophic equipment failure
   I.E. crane collapse, failure of a fall protection system, vehicle hoist failures, etc.

   Accidental exposure to biological agents
   Reporting only required where the exposure has resulted in medical treatment beyond first aid.

   Accidental exposure to physical agents
   Reporting only required where the exposure has resulted in medical treatment beyond first aid.
   I.E. frost bite, heat stroke, decompression sickness, electrical burns

   Accidental exposure to chemical agents
   Any exposure to a chemical agent at a level of concentration that constitutes a hazard to the health of the exposed employee and, if an occupational exposure limit exists in respect to the chemical agent, any exposure above the occupational exposure limits, or an accidental exposure to a chemical agent where the exposure concentration is unknown.

In all cases with electrical contact to equipment or machinery, it is imperative that Fleet is contacted for direction. The unit in question should not be moved for any reason (after separation from the contact); unless directed to do so, by the Fleet Coordinator.

Reference:
1. HSEE-03-03 Incident Reporting, Notification and Investigation
2. OHS Act

1.7 SERIOUS INCIDENT SCENE MANAGEMENT

When an incident occurs, there are several steps that must be followed immediately. These steps will ensure that a secondary incident does not occur, and emergency services are immediately summoned to either provide first-aid or lessen the severity of the incident and any evidence is preserved for investigation. ***See Appendix 9.4 Responsibilities.***

When an Incident Occurs:

1. Take Control of the Scene
2. Ensure First-aid and Emergency Services are Notified (if required)
3. Make Appropriate Notifications
4. Preserve Evidence
5. Identify Sources of Evidence
6. Once the scene is cleared, determine safe completion of the Job

Except as otherwise ordered by a WorkSafeNB officer, no person shall disturb the scene of an accident that results in serious injury or death except as is necessary

(a) to attend to persons injured;
(b) to prevent further injuries; or
(c) to protect property that is endangered as a result of the accident.

References
1. HR-33 Corporate H&S Policy
2. HSEE-03-03 Incident Reporting, Notification and Investigation
3. OHS Act Chapter O-0.2, Sections 43 and 47
4. WorkSafeNB Form, report of an accidental exposure or explosion (available on the WorkSafeNB website)
5. OHS Act – Regulation 2004-130 (First Aid) Section 6

1.8 EMPLOYEE LIMITATIONS

1. Employees are responsible for informing their supervisor of any physical or other limitations that may reduce their ability to work safely. ***This may include personal matters outside of work that is causing major distractions.***
2. If there are reasonable grounds to suspect that an employee that is mentally or physically unable to perform assigned tasks safely, the supervisor must be notified immediately to determine the employee's capabilities.
3. ***When an employee is under the care of a physician who has prescribed treatment which may adversely affect their performance, the employee shall immediately notify their supervisor.***

Reference
1. HR-25 Alcohol and Drug Use policy

1.9 EMPLOYEE RIGHTS

1. Right to Know

All employees have a right to receive the training needed to do the job safely. All employees, new, transferred or experienced, must be made aware of:
- Workplace hazards
- Safe work procedures
- Emergency procedures

If at any time you are unsure about a task on the job or are concerned about your personal safety or the safety of others, you should talk to your supervisor about receiving additional on-the-job training.

2. Right to Participate

All employees have a right to participate in solving health and safety problems and in the identification and control of workplace hazards, also taking part in JHSC and Safety Meetings.

3. Right to Refuse Unsafe Work

An employee may refuse to do any act where they have reasonable grounds for believing that the act is likely to endanger the health or safety of themselves or of any other employee. Exercising this right is significant and should not be done lightly or as a routine method of solving workplace issues. However, employees should not be afraid to exercise their right to refuse unsafe work when they believe the work will endanger their health or safety, or that of others.

An employee who believes that an act is likely to endanger their health or safety, or any other employee's or member of the public's health or safety, shall immediately report their concern to their supervisor who shall promptly investigate the situation and follow the process documented in Corporate H&S Standard HSEE-03-14.

References

1. OHS Act Chapter O-0.2, Section 19
2. HSEE-03-14 Right to Refuse Unsafe Work

1.10 SAFETY COMMITTEES AND MEETINGS

1. Joint Health and Safety Committee

a) Joint Health and Safety Committees shall be established at all NB Power work locations with twenty or more employees. A Joint Health and Safety Committee shall be established on a project site as per sections 14.2-14.5 of the Occupational Health and Safety Act of New Brunswick.

b) A committee shall consist of equal representation from both the employer and the employees.

c) It was approved by WorkSafeNB that Distribution could develop their JHSC's with an employee and employer representative from each district office instead of a JHSC for each district office because the numbers are low. In Transmission, it was approved that because the employees work across the province and not in one location, one JHSC would be acceptable if each department is represented.

d) For a project site, the same rules apply until work on the project is completed, regardless of the number of employees working on the site. For additional information on medium or large projects refer to the OHS Act section 14.1 JHSC for Project Site.

e) When is a project site committee required?

- ***"Medium" project sites on which 30 to 499 employees work at the site, with a project lasting more than 90 days.***
- ***"Large" project sites with more than 499 employees working at any time.***

References

1. OHS Act Chapter O-0.2, Sections 14 to 16 and 17.1.
2. HSEE-03-04 Maintaining Joint Health and Safety Committees and Safety Meetings

2. Safety Meetings

Safety meetings are designed to promote safety and occupational health awareness to all staff and to promote public safety.

a) Management staff of work units directly involved in operation, maintenance, or construction are responsible for conducting local Safety Meetings with their staff on a *monthly* basis.

b) Management staff of all other work units not identified above shall hold Safety Meetings with their staff to discuss health and safety issues (i.e., air quality, ergonomics), on a minimum of a *quarterly* basis.

References

1. HSEE-03-04 -Maintaining Joint Health and Safety Committees and Safety Meetings

3. Tailboard Conference (pre-job brief)

Tailboard / pre-job briefs are required to increase hazard awareness and controls in order to reduce workplace accidents with the goals of approaching zero harm and eliminating workplace incidents and injuries. It is an interactive conversation with all employees involved in the work ***focusing on high energy hazards and controls (energy wheel)***. It is considered the final step of planning the work and the work shall not commence until a thorough tailboard conference / pre-job brief has taken place.

All employees and contractors involved in performing work must participate in a tailboard / pre-job brief. Contractors are permitted to utilize their own forms if they meet the requirements of NB Power's Standard.

a) All work shall be properly planned, considering personnel, approved work procedures, equipment, and the physical and environmental conditions at the workplace. The purpose of this process is to ensure that the identification of the job steps, hazards, appropriate barriers, and steps to be taken in case of an emergency were determined and put in place, prior to job commencement.

b) ***If the scope of work changes during the job, work must stop, and the Tailboard/ Pre-Job Brief must be re-assessed to ensure all potential hazards/energies are mitigated.***

c) Each location shall establish its own criteria for when tailboard conferences must be documented aligning with Corporate H&S Standard HSEE-03-41.

d) ***Hazard recognition is only the first step in staying safe. Not all energy sources you identify are likely to cause a problem. Rather, only situations with large amounts of energy are likely to cause a life-altering or life-ending injury. During tailboards, the Energy Wheel can help the crew identify sources of hazardous energy and controls they may encounter that day. See Appendix 9.6.***

References

1. OHS Act, Chapter O-0.2
2. HSEE-03-41 - Tailboard Conference/Pre Job Brief

1.11 JOB HAZARD ANALYSIS (JHA)

A Job Hazard Analysis is a documented, systematic approach to hazard identification, assessment, and mitigation. This tool is typically developed during the planning stage of work and can be several weeks prior to the job starting, or in some circumstances, on short notice. However, to ensure the proper amount of rigor and analysis have gone into the job, ***focusing on high energy hazards and controls (energy wheel)***, considerations for early planning should always be implemented.

It is important to note that all work being completed at NB Power facilities must have a risk assessment completed to understand all hazards and controls applicable to the job and to ensure the health and safety of all workers. A Job Hazard Analysis is one method of documenting a risk assessment. For routine work or low risk jobs, a Tailboard Conference/ Pre-Job Briefing may be all that is required, if an existing safe work practice does not exist.

A well established work method, standard, or procedure that covers hazards and controls are acceptable.

References

1. OHS Act, Chapter O-0.2 Section 8.1
2. HSEE-03-01 Hazard Identification, Assessment & Mitigation for Completing a JHA
3. Form 554 JHA

1.12 ADMINISTRATIVE PENALTIES

Administrative penalties is a new tool developed by WorkSafeNB to motivate workplace parties to focus on safety. An administrative penalty is a monetary amount that may be imposed on an employer, supervisor, employee or other workplace party for failing to comply with the OHS Act or regulations.

Anyone who has responsibilities to comply with the requirements of the Act and the regulations (employer, contractor, sub-contractor, contracting employer, supplier, supervisor, owner or employee) may receive an administrative penalty.

Administrative penalties may be imposed when a workplace party is in violation of sections of legislation identified by WorkSafeNB as high risk. These selected main sections below do not represent a complete list of all high-risk situations present in workplaces; however, these have a history of causing a serious injury when a workplace in not in compliance. The sections will be reviewed on a regular basis from WorkSafeNB and are subject to change.

Legislation identified as high-risk activities are divided into 5 main categories:

1. ***Fall protection***
2. ***Excavation and trenching***
3. ***Machine safety***
4. ***Chain saw, brush saw or clearing saw operation; and***
5. ***Working with materials containing asbestos***

Reference:

1. ***HSEE-03-47 Legislation and Compliance***
2. ***OHS Act Section 36.1-36.6 Administrative penalties.***

1.13 VIOLENCE AND HARASSMENT

Workplace violence is an unacceptable hazard and is a potential working condition that cannot be tolerated. Working alone, with customers, the public, and within the community are known risk factors, increasing the potential for workplace violence. Workplaces with internal conflict also pose a risk for internal acts of aggression between workers.

If an incident occurs with a member of the public or customer, the incident must be reported to your immediate supervisor and documented. Use the Health and Safety Incident Report (E-form 145) to ensure the information has been captured, investigated and any corrective actions implemented to prevent re-occurrence.

In the case of internal unresolved conflict or internal threats, the process for dealing with harassment is found in the Respectful Workplace Policy HR- 14 and must be followed to resolve issues to prevent escalation toward threats or violence. If you encounter a threat which poses an immediate danger to your personal safety, call 911 or observe your local protocol for immediate assistance.

Each NBP location has completed a Risk Assessment and Code of Practice for Workplace Violence and Harassment. They are located on the Hard Hat site as well as the safety bulletin boards in each location.

Reference:

1. ***HSEE-03-43 Workplace Violence Prevention***
2. ***HR-14 Respectful Workplace Policy***

SECTION 2 – GENERAL OCCUPATIONAL HEALTH AND SAFETY RULES

2.1 GENERAL RULE

1. Loose clothing shall not be worn while working around moving parts.
2. Jewelry shall not be worn on the body where it might cause a hazard around rotating parts, or any other potential entanglement, i.e. bracelet, necklace.
3. Jewelry with metal parts shall not be worn where there is any risk of contact with live electrical parts or circuits.
4. Long hair, including facial hair, shall be suitably confined to avoid entanglement with any moving parts.
5. ***Site specific rules must be communicated during site orientation.***

2.2 SAFETY ON CUSTOMER'S PREMISES

1. If in the reasonable opinion of an NB Power employee, conditions at a customer facility present a hazard to the employee's health or safety, then the employee shall not expose themselves to such hazard(s). ***Exercise your right to refuse unsafe work. Some examples are harassment, violence from irate customers, and dangerous dogs.***
2. The employee will make a reasonable attempt to inform the customer of the hazard and shall promptly notify their supervisor of both the concern and decision to not be exposed to the identified hazard.
3. Supervision will take whatever follow-up steps they deem reasonable to have the customer correct the unsafe conditions and will ensure that the employee is not exposed to the identified hazard(s).
4. ***If an employee experiences violence or harassment in the public, the supervisor must be notified and flag the customer in the computer system.***

2.3 EMERGENCY ACTIONS OF EMPLOYEES

1. In any emergency employees shall act according to their best judgment. Under such circumstances, when quick action is necessary to safeguard life or property, all employees are authorized to perform any operation which they thoroughly understand, but under no circumstances are they to perform any operations concerning which they are in doubt, ***or which puts themselves in harms way.***
2. Any action taken in an emergency shall be promptly followed by a report to the supervisor stating clearly the action taken and the reason for it.

2.4 HANDLING, STORAGE AND TRANSPORTATION OF MATERIALS

1. Materials shall be stored on adequate foundations and shelving. Shelving must be secured as per manufacturer's instructions. In most cases, bolted to the wall and floor and connecting pins must be in place. Heavy items placed on the bottom shelves.
2. Hazardous materials (***examples:*** flammables, chemicals, explosives), shall be stored in accordance with local ordinances, applicable regulations, as well as any storage requirement as indicated on Safety Data Sheets (SDS).
3. ***Emergency equipment and appropriate spill response material must be readily available to be used in the event of escape or spill of a hazardous substance.***
4. ***Storage area for a hazardous substance must be clearly identified by a placard that meets the standards set out in the "National Fire Code of Canada 2010".***

5. All persons involved in the shipping, receiving or handling of dangerous goods shall be trained in the Transportation of Dangerous Goods Act and Regulations on a minimum of every 36 months. All rules and regulations of the Transportation of Dangerous Goods Act and regulations shall be followed at all times.
6. Transportation of Dangerous Goods Act (TDG)
    a) Dangerous goods are only those items identified as such in the TDG Regulations, Schedule 3. These compounds are identified by type, quantity and means of containment for each mode of transportation (road, rail, water and/or air).
    b) Dangerous goods assigned an internationally recognized UN number to identify it and shall have proper safety marks and a *Safety Data Sheets (SDS)*.
    c) Dangerous goods shall be handled (including transported) by qualified trained personnel, and safety measures such as safety marks and documentation are required and strictly enforced as per the Transportation of Dangerous Goods Regulations.
    d) Hazardous materials do not have UN identification numbers and are not covered by the TDG Act and Regulations but may have a *SDS* and may be regulated by WHMIS. Always require specific identification of the materials, assessment of handling and transportation risks and safe handling techniques.
7. When a capacitor is in transit or in stores, the terminals of the capacitor shall be short-circuited and grounded to the capacitor case. This rule works for single bushing capacitors and short the bushings for two bushing capacitors.

References
1. OHS Act, Regulation 91-191, PART VIII, Sections 52-79
2. HSEE-03-38 WHMIS
3. HSEE-03-39 Transportation of Dangerous Goods (TDG)
4. OHS Act, Regulation 92-106
5. Transportation of Dangerous Goods Act

2.5 HOUSEKEEPING

Good Housekeeping in the workplace makes the workplace a better, hygienic and a safe place to work. The importance of housekeeping has a vital role in workplace safety prevention and to make this program successful, the employees must participate.

1. In the interests of safety, fire prevention and hygiene, all NB Power premises (including vehicles) shall be always kept clean and orderly by all employees.
2. Materials, tools and equipment shall be placed where they belong; aisles, walkways, emergency exits and equipment, electrical panels and stairs kept clear of obstructions; and floors kept clean of all grease, oil, slippery substances and water.
3. All waste and combustible materials shall be stored in approved containers and be properly labeled.
4. Outside stairs, sidewalks, walkways and doors shall be kept clear of ice and snow.
5. Clothing lockers, washrooms, showers and restrooms shall be kept in a clean, ventilated and orderly condition.

Reference
1. OHS Act, Regulation 91-191, PART II, Section 15
2. HSEE-03-15 Workplace Housekeeping

2.6 LIFTING, LOWERING, PUSHING, AND PULLING (Manual Handling)

All employees must understand and apply safe lifting, lowering and pushing practices.

If a lift is beyond your physical capabilities, use mechanical aids (examples: pallet jack, forklift) or ask for assistance.

Before attempting to lift any item, plan the job, including walking down the travel route to clear any potential obstructions.

Reference

1. OHS Act, Regulation 91-191- "Handling and Storage of Materials", Section 52
2. CSA-Z412 Guideline on Office Ergonomics Section 5.10.3, Lifting and Lowering, and 5.10.4, Pushing, Pulling and Carrying.
3. HSEE-03-46 Manual Handling

2.7 OFFICE SAFETY

1. General

   - Employees shall walk up and down stairs with one hand on the handrail.
   - Employees are to exercise caution when walking around blind corners and are to keep to the right whenever practicable.
   - Clothing shall be worn which is suitable for the conditions and the work being performed.

2. Doors

   - Doors shall be opened slowly to avoid striking anyone on the other side of them.
   - Fire doors shall never be blocked open or otherwise obstructed in any manner.

3. Ladders

   - Employees shall use approved portable stepladders when required to place or obtain objects in elevated locations.
   - Ladders and platforms shall be examined before use; treads and ladder safety feet shall be provided with non-slip material.
   - Items such as boxes or chairs shall not be used in place of ladders.

4. Sharp Objects

   - For the disposal of sharp objects (syringes or broken glass), a separate puncture-resistant container identifying the contents shall be used.

5. Building Evacuation

   - Employees discovering fires shall notify those in the area by whatever means is available. Incipient fires (small) may be extinguished with portable extinguishers, provided the person has been trained and it can be done safely.
   - It is the responsibility of the employer to ensure that all employees are knowledgeable in fire protection and evacuation procedures.
   - Materials and furniture shall not be placed in front of, or otherwise hinder access to, fire extinguishers, exits or pathways.
   - Each employee shall note the location of fire extinguishers, exits and fire alarms.
   - All employees shall evacuate the building when the alarm sounds.
   - Each location shall have a written evacuation procedure, fire plan drawing and a documented annual evacuation drill and educate employees.

6. Office Equipment

   - Unsafe electrical cords, faulty electrical equipment or other equipment in a hazardous condition shall be repaired immediately or removed from service.
   - Employees shall not attempt to clean, oil, or adjust any machine that is running. If the machine is not equipped with a starting switch that can be locked in the "off" position, it shall be disconnected from its power source.

7. Office Ergonomics

    - Employees should have their workstation set up as per the guidelines outlined in CSA Z412.
    - Ergonomic Assessments are available and may be arranged through the employees' supervisor and Total Health.

References

1. OHS Act, Regulation 91-191, Section 52 (Handling and storage of materials)
2. OHS Act, Regulation 91-191, Section 122, 123, 124, 125 and 126 (Portable ladders)
3. CSA-Z412 Guideline on Office Ergonomics
4. HSEE-03-29 Emergency Evacuation
5. HSEE-03-70 Ergonomic Assessment

2.8 PERSONAL CONDUCT

1. The use of intoxicating substances or non-medical drugs ***which may impact your performance*** is strictly forbidden. No employee shall report to work while under the influence of these substances and no supervisor shall knowingly permit an employee who is under the influence of intoxicants, illegal or non-medical drugs, to go to work.
2. Employees using any prescription or non-prescription medication that could affect their performance shall advise their supervisor.
3. Employees are not to engage in any pranks, contests, feats of strength, unnecessary running or rough and boisterous conduct in the workplace.
4. All employees shall use reasonable care in the performance of duties. They shall act and work in such a manner as to always ensure maximum safety to themselves, their fellow employees and the public.

References

1. OHS Act, Regulation 91-191, PART II, Section 12
2. HR-25 Alcohol and Drug Use

2.9 WORKING ALONE

A working alone code of practice is required for each operating company and may be required for specific work groups and specific work locations. The code of practice shall be communicated to all employees at the work site, reviewed periodically and incorporated in the daily work practices where required. This code of practice shall cover the needs for every work shift, every employee, and every applicable task at each work site. This also includes travelling alone for work or working alone in an office. The key to every working alone code of practice is a practical communications process that ensures any employee or person working for NB Power in any area or at any time that frequent interaction with other employees is not possible, is checked on periodically to ensure their safety and well-being. Documentation of these communications is required.

1. General

    The regulations and various NB Power policies, work methods, and standards also specify situations where working alone is prohibited.

    It is not permitted to work alone:

    a) in confined spaces,
    b) while performing underwater diving operations,
    c) where there is a risk of drowning ***unless the employee wears a life jacket or pfd***
    d) chain saw, brush saw and clearing saw,
    e) working with electrical apparatus:

        - no personnel shall work alone on tasks that require a hold-off or on any tasks that require "hands-on" work on the primary system, i.e., repairing the primary conductors, replacing cutouts and/or lightning arrestors, changing insulators, installing current limiting fuses or installing wildlife outage protectors,

- for work on any apparatus which is or was energized over 750 volts, there is a requirement for the second qualified person regardless of the existing potential,
- setting or removing poles:
  - a minimum of two qualified pole-setters shall always be present when setting or removing poles between any energized conductor exceeding 750 volts.

Note: A qualified employee may work alone with a hot stick to operate cutouts, switches, oil reclosures and tap clamps provided that no dangerous conditions are foreseen which would prevent the work from being done safely.

Each department (if applicable) must establish their own code of practice to ensure compliance with the legislation.

Reference

1 OHS Act, Regulation 92-133 Working Alone
2 HSEE-03-13 Working Alone

2.10 FIRST AID

1. Managers shall develop and maintain First Aid response capability in their workplaces, with enough first aid kits and trained first aid personnel to meet all the requirements of the Occupational Health & Safety Act and First Aid Regulations.
2. First aid is intended to be a simple, practical guide for effective action in time of emergency. Except for minor injuries, professional medical treatment should be sought.
3. Kits - Where First Aid Kits are supplied, employees shall be familiar with their location and contents. The contents of the first aid kits shall be inspected at regular intervals by the designated first aid attendant and expended ***and expired*** items replaced as per the Regulation 2004-130 under the New Brunswick Occupational Health & Safety Act.
4. Training - Employees designated to administer first aid shall be certified by an approved provider for first aid training that meets the criteria specified in Occupational Health & Safety Regulation 2004-130

   a) Field Operation
   All NB Power personnel and contractors engaged in any field work shall hold a valid first aid certificate and be trained in artificial respiration and cardio-pulmonary resuscitation.

   b) Operations
   Plant management is responsible for ensuring each plant's requirements for first aid personnel holding valid first aid certificates with training in artificial respiration and cardio-pulmonary resuscitation.

   c) Other
   All other NB Power locations shall meet the minimum guidelines as identified in Regulation 2004-130.

5. ***NB Power's First Aid Training includes a 3rd day Transportation Endorsement training for High Risk work taking place at Isolated (remote) Work Sites as per TLM Isolated Line Work First Aid Transportation Plan VIII-A.1.00. Contractor's must meet or exceed this requirement.***

6. It is emphasized that the injured person may not be the best judge of their condition, especially in the case of specific trauma events. Where a decision is made to transport the injured person to a medical facility by means other than an ambulance, transport shall only take place if the injured person is accompanied by at least one first aid provider who is not the operator of the transportation (this is only take place if the injury is minor and there is a small chance it will worsen). Otherwise, 911 shall be called and an ambulance summoned.

References:

1. OHS Act, Regulation 91-191
2. 2004-130 First Aid Regulation
3. HSEE-03-10 First Aid

2.11 CODE OF PRACTICE

1. A "Code of Practice" is a formal requirement designed to address particularly hazardous situations. Either a regulation or WorkSafeNB may require an employer to prepare such a code. There are several references in the regulations under the Occupational Health and Safety Act which require a code of practice to be implemented. The codes of practice set out by WorkSafeNB are generally generic. Where an employer is required to establish a code of practice, it will reflect the specifics that shall be done at the workplace.

    a) Lock out and tag out (in the electrical sense)
    b) Lock out and tag out (in the mechanical sense)
    c) For misfired charges
    d) Respiratory protective equipment
    e) Breaking up clog
    f) Use of unusual explosive
    g) Unusual use of explosive
    h) Working alone
    i) Working with materials containing asbestos
    j) Working in confined space(s)
    k) Working on roof
    l) Water safety
    m) Fall Protection

2. All codes of practice shall include but are not limited to:

    a) an introduction identifying the hazardous substance(s) and/or situation(s) which may be encountered, a description of the hazards and the possible effect(s) on health and safety.

    b) identification of the person or persons at risk from the hazardous substance(s) and/or situations(s).

    c) identification of the person or persons responsible for implementing the code of practice.

    d) the time, day, or event before, during, or after which the code of practice might be applicable.

    e) the location or locations where the code of practice might apply.

    f) the methods to be used to ensure the health and safety of any employee at risk.

    g) emergency procedures and equipment which might be required in the event of failure of any of the regular procedures or equipment.

3. When employees shall perform a site-specific task and there is uncertainty as to the procedures to be followed and what might be a hazard(s) to employees, the employer shall develop a code of practice for the site-specific task.

References

1. OHS Act, Regulation 91-191 - Section 45, 51, 55, 108, 158, 171, 179, 240, 286, 292
2. OHS Act, Regulation 92-106

2.12 FIRE PROTECTION

It is important that work activities do not impact fire protection.

DO the following:

- Smoke only in designated areas,
- Store flammable liquids in flame proof cabinets,
- Dispose flammable waste in flammable waste cans,
- Dispose of combustible waste materials at the end of shift or sooner,
- Maintain good housekeeping,
- Minimize transient materials and combustibles,
- Control ignition sources – this includes hot work activities (cutting, welding, grinding, brazing) and temporary ignition sources (heaters, temporary lighting).

DO NOT:

- Block or obstruct exits, egress routes (corridors and stairwells) or emergency lighting or exit signs,
- Compromise public address speakers,
- Block or obstruct fire equipment (smoke detectors, sprinklers, fire valves, fire hose cabinets, fire extinguishers, eye wash stations, emergency showers, pull stations, fire hydrants),
- Prop open fire doors,
- Overload electrical circuits,
- Store materials and equipment within 1 meter of electrical panels,
- Use damaged electrical equipment such as frayed cords or damaged electrical tools,
- Place combustibles close to heat sources.

SECTION 3 – PERSONAL PROTECTION

3.1 GENERAL STATEMENT

PPE is an essential safety component when there is potential of injury as a result of an exposure or where a physical, chemical, or biological hazard exists. PPE is an employee's last line of defense and is intended to be combined with other barriers to prevent injury or illness.

1. Employees and contractors exposed to occupational hazards that are potentially injurious are required to wear the appropriate PPE which includes protective clothing. Personal protective equipment shall be made available and shall be used at all work locations.
2. All employees and contractors are expected to know when, where and how to use protective equipment. Those not competent shall be given instruction and training on the protective equipment prior to beginning the job.
3. High visibility clothing must be worn when working on or near roadways, on construction sites, working around heavy equipment as well as in the woods during hunting season or whenever the Supervisor deems it necessary for the safety of the workers.
4. All PPE must be inspected for damage, wear and tear before use, as per manufacturers instructions.
5. ***Contaminated PPE shall be removed before eating or entering lunchrooms.***

Reference

1. OHS Act, Regulation 91-191, Part VII
2. GS068-Arc Flash Prevention and Protection
3. T&D Arc Flash Standard
4. HSEE-03-11 Personal Protection Equipment (PPE)
5. High-Visibility Safety Apparel" CSA standard Z96-15 (R2020)

3.2 PERSONAL PROTECTIVE EQUIPMENT FOR UTILITY ARBORICULTURE OPERATIONS

1. *All NB Power employees and contractors, while performing Utility Arboriculture operations, shall wear appropriate personal protective equipment while performing work for NB Power.*
2. Eye and Face Protection for Brush Saw and Chainsaw Use
   a. CSA approved safety glasses shall be always worn while operating a chain saw. Mesh screen/protective visor can be worn as secondary eye/face protection if desired.
   b. CSA approved safety glasses shall be always worn by employees while carrying out traffic control duties.
3. Protective Footwear for Chain Saw Use

   All employees or contractors whose job functions require them to use a chain saw while doing work for NB Power, shall wear safety footwear meeting the requirements of CSA standard Z195-M92 "Protective Footwear".
4. Protective Footwear for Brush Saw Use and Wood Chipper Operation

   CSA approved safety footwear (grade 1 toe protection, sole puncture protection and electric shock resistant soles) shall be worn while employees or contractors work with a brush saw or operate a wood chipper for NB Power.
5. Leg Protection for Chain Saw Use

   Full chain saw pants which offer protection to the front and back of the leg shall be used by employees or contractors whose job functions require them to use a chainsaw on a continual basis.

   When employees or contractors perform work for NB Power requiring the use of a chain saw on an intermittent basis, either chaps which offer full frontal and back of the lower leg protection

from the top of the safety footwear to the groin or full chain saw pants shall be always worn.

6. Head Protection for Chain Saw, Brush Saw and Wood Chipper Operation

   All NB Power employees or contractors shall always wear NB Power approved headwear while using a chain saw or brush saw or while operating a wood chipper for NB Power.

7. Hearing Protection for Chain Saw, Brush Saw and Wood Chipper Operation

   All NB Power employees or contractors using or in the immediate vicinity of an operating chain saw, brush saw, or wood chipper shall wear approved hearing protection that provides an adequate noise reduction rating for the equipment in use.

   NOTE: Earmuffs shall be maintained and replaced on a regular basis as per manufacturer's recommendations.

8. Clothing and Hand Protection for Wood Chipper Operation

   Only competent employees shall operate, repair, or service chippers, and they shall wear appropriate eye, head, hearing, and foot protection always while so engaged. Further, when feeding the chipper, tight fitting gloves and snug fitting clothing shall be worn. Gauntlet style gloves are not permitted.

9. Personal Protection for Chain Saw Operation from an Aerial Device

   a) Eye, head and hearing protection as identified in ***section 3.2*** shall be worn while operating a chain saw from an aerial device.

   b) Chainsaw foot and leg protection is not required while operating a chain saw from a closed-in aerial device.

   c) Chainsaw foot and leg protection are required while operating a chain saw from an open-sided aerial device.

   d) A chain saw shall never be left running and stored in an aerial device (bucket).

References

1. CSA Standard Z195-09, "Protective Footwear"
2. OHS Act, Regulation 91-191- Sections 39, 40 and 41
3. CSA Standard Z94.3-07 Industrial Eye and Face Protectors
4. CSA Standard Z94.1-05, "Industrial Protective Headwear"
5. File "Correspondence with WorkSafeNB on Personal Protective Equipment for Chain Saw Use"
6. CSA Standard Z94.2 - M1984. Hearing Protection
7. ANSI Z89.1" American National Standard for Industrial Head Protection"
8. HSEE-03-11 Personal Protective Equipment

3.3 EYE PROTECTION AND FACE PROTECTION

1. General
   a) Suitable CSA approved eyewear protection shall be worn by all personnel on NB Power property, or while performing work for NB Power, with the following location exceptions:

      - meeting rooms
      - lunchrooms
      - office areas (control rooms)
      - driver and passenger area of vehicles
      - travel areas between vehicles and work location

   b) When the eye protection required exceeds, the frontal protection provided by safety glasses, special types of eye protection shall be worn.

   c) Supervisors shall ensure that the eye protection worn is suitable for the job.

   d) Safety glasses shall not have glass lenses.

e) Safety glasses shall have side protection that is integrated or permanently affixed to the frame.

f) If there is a risk of facial injury, eye protection and a face shield shall be worn for activities such as grinding, welding, cutting, chipping.

2. Prescription Safety Glasses

   All prescription safety eyewear shall be equipped with permanent affixed side shields and shall meet the performance requirements for high impact resistance.

   For additional information regarding NB Power's Prescription Safety Glasses program, review the Personal Protection Equipment (PPE) Standard HSEE-03-11.

   The use of photochromic lenses (which darken when exposed to sunlight) are accepted, however when workers enter a building from outside, they must have clear vision before proceeding.

3. Protection from Mechanical Injuries

   In most circumstances, safety glasses will provide adequate protection; however, depending on the task, safety goggles or face shields, may be required. Face shields alone do not offer high impact protection and shall be used as secondary protection over safety glasses. When using a welding shield, safety glasses are required underneath.

4. Protection from Chemical Injuries

   Chemical burns and toxic injuries can be caused by contact with many substances that have acidic or alkaline properties. Employees working with hazardous chemicals shall use suitable eyewear such as safety goggles, face shields, chemical hoods for the job at hand. Work locations requiring such protection shall be identified by the local area manager and shall be posted as such. Eye wash stations shall be provided in or near these locations.

5. Protection From Ionizing Radiation

   Work requiring special eye protection (i.e., protection from ionizing radiation) shall be identified by the local Radiation Safety Officer or equivalent and the eye protection used shall be in accordance with the Canadian Nuclear Safety Commission Regulations and facility radiation protection procedures.

6. Protection from Non-ionizing Radiation

   For non-ionizing radiation work (ultraviolet light, infrared, microwaves and lasers) the employee shall wear properly fitting goggles, face shield, or other adequate eye protective equipment appropriate for the specific task at hand (i.e., arc welding goggle).

   Supervisors shall ensure that employees working in the area and not engaged in a welding, cutting, burning or soldering operation, are protected from harmful radiation by providing adequate screening around the operation or by preventing the employee's entry to the area where the operation is being conducted.

References

1. OHS Act, Regulation 91-191, Part VII, Section 39, Part XVIII, Section 277
2. CSA Standard Z94.3-07– Eye and Face Protection
3. GS068-Arc Flash Prevention and Protection
4. T&D Arc Flash Standard
5. HSEE-03-11 Personal Protective Equipment

3.4 FOOT PROTECTION

1. Employees shall wear suitable footwear for the work being done ***and worn as intended.***
2. Footwear shall have sole protection and Grade 1 toe protection as per CSA Standard Z195-M92. Footwear that has the required sole and toe protection is marked with the distinctive external green CSA triangle.
3. Footwear with electric shock resistant soles will be identified with a rectangular white patch and orange Greek Omega symbol (Ω) attached to the outside of the right shoe or boot.
4. Under certain circumstances, and for specific job classifications, other types of safety footwear may be approved based on a hazard analysis and consultation with and by the Total Health & Safety Department. A request for wearing another type of safety footwear shall be done in writing to the Total Health & Safety Department.
5. Leather or similar footwear may not be appropriate for some chemical exposures. When chemical exposures are anticipated refer to the Safety Data Sheet (SDS). If adequate information is not available, contact the Total Health & Safety Department.
6. ***Ice cleats are a mandatory piece of equipment that must be on workers winter footwear and utilized when conditions call for it. These cleats are only going to aid in slip/fall prevention if you have the right mindset and focus on the task to walk safely. The type of cleats chosen should match the task that you are doing (full sole, heel, or mid-boot).***

   When to wear ice cleats?
   - ***Monitor flash freeze temperatures (usually morning or evening have the highest risk of ice formation on ground)***
   - ***Ground surface is covered in ice or patchy with ice***
   - ***At the direction of your Supervisor for the purpose of work***
7. In terms of upgrading your work boots/shoes, any sign of damage to the toe cap or mid-sole it should be replaced.

References
1. OHS Act, Regulation 91-191, Part VII, Section 41(1)(2)
2. HSEE-03-11 Personal Protective Equipment
3. CSA Standard Z195-09 - Foot Protection
4. GS068-Arc Flash Prevention and Protection
5. T&D Arc Flash Standard

3.5 HAND PROTECTION

Employees engaged in work where there is a danger of cuts, slivers, burns, contact with hazardous materials, exposure to heat and cold, shall wear suitable gloves for hand protection ***specific to the hazard.***

Reference
1. OHS Act, Regulation 91-191, Part VII, Section 42, 43(1)(2), 44
2. GS068-Arc Flash Prevention and Protection
3. T&D Arc Flash Standard
4. Corporate H&S Standard III-12-Arc Flash
5. HSEE-03-11 Personal Protective Equipment

3.6 BODY PROTECTION

1. Where an employee is exposed to a hazard that may injure the skin, the employee shall use, as necessary adequate body covering. Potential hazards to exposed skin of employees working on construction projects include abrasions, cuts, exposure to chemical irritants.

   Long pants must always be worn when working on construction sites, forestry operations and in the plant environment.

2. Arc Flash rated clothing

   Arc flash protective clothing and associated PPE are required when work is being performed within the arc flash boundary.

   When the task requires the individual to interact with energized equipment or expose themselves to bare energized equipment the same applies.

   Arc-rated garments shall be constructed of inherently flame-resistant fabric or fabric treated for permanent (normal life of the garment) flame resistance and the level of protection, or the arc rating, shall be identified on the garment. The arc rating may vary from one garment to another, and therefore it is important that the individual is knowledgeable on identifying the arc rating of their garments to ensure sufficient protection against the hazard. The arc rating of the garment is identified on the manufacturers tag and should be expressed as ATPV or Ebt.

   Layering

   Non-melting clothing is allowed to be worn under an arc-rated clothing.

   Arc-rated clothing shall cover potentially exposed areas as completely as possible.

Reference

1. OHS Act, Regulation 91-191, Part VII, Section 42
2. SWM 3.04.01 – Arc Flash Protection (T&D)
3. HSEE-03-11 Personal Protective Equipment
4. GS068-Arc Flash Prevention and Protection

3.7 RUBBER GLOVES - USE OF ELECTRICAL

1. Rubber gloves used for protection from Electrical Shock shall comply with ASTM D120.
2. The recipient of rubber gloves shall be responsible for their care and maintenance. Remove all jewelry (watches, rings) and sharp objects from your hands or arms before wearing rubber gloves - they may cause damage to the rubber gloves which will affect glove safety and performance.
3. Rubber gloves shall be checked both visually and with an air test prior to use. If the integrity of the rubber glove is in question the glove shall NOT be used.
4. Rubber gloves shall be used in conjunction with protective covers. The gauntlets of the protective covers shall have the appropriate distance between the cover and the cuff of the glove.
5. All rubber gloves must be tested and inspected by the Service Center Repair Shop (or qualified test lab). Ensure inspection dates are current before use.
6. Rubber gloves of the appropriate rating shall be worn:

   a) Prior to opening any equipment door or panel which would allow access to exposed energized equipment.

   NOTE: Rubber gloves are not required to open hinged panels containing control circuits at or below 150 volts AC or 300 volts DC, however insulated tools or rubber gloves are required for interaction with these circuits.

   b) Prior to entering the area where the employee could reach, touch, slip, fall, or bring any object within the distances set out in Appendix 9.1, Table 1, Column A. When rubber gloves of the appropriate rating are not available (i.e., 69, 138, 230, 345 kV) then other guards, barriers or work procedures shall be used.

   c) Prior to operating gang switches, switch handles and cutouts at all voltages.

   d) When applying or removing grounds and bonds at all voltages. ***"NBP requires the use of rubber gloves and the properly rated stick for the installation and removal of temporary grounds and bonds".***

*e) **SOP-T0019 stipulates that contractors will follow NB Power's grounding and bonding practices therefore they are to wear rubber gloves as well.***

f) When opening the vehicle gate at substations, terminals and switching stations (either entering or exiting), with a minimum Class 2 rating.

References

1. OHS Act, Regulation 91-191, Section 288
2. HSEE-03-11 Personal Protective Equipment
3. Appendix 9.1
4. T&D Standard Work Method

3.8 HEAD PROTECTION

1. CSA safety headwear shall be worn by all employees, contractors and visitors in areas where head protection is mandatory (CSA approved or equivalent). ***CSA Class E Type 2 headwear must be worn where construction work is being conducted.***
2. The hard hat shall be worn as designed with the peak in front and suspension worn in the proper direction. For welding activities, if it becomes necessary to wear the hard hat with the peak in the rear, the suspension shall be reversed so that it is orientated properly.
3. Safety headwear and headband assembly shall not be defaced or altered in any manner. If the headwear is cracked or otherwise damaged, it shall be replaced. Headwear shall be inspected by the wearer at the beginning of each workday or shift, for cracks, signs of impact or rough treatment. Shells and suspensions shall be kept clean and always maintained in excellent condition and any defective parts shall be replaced immediately.
4. Chin straps, helmet liners, and hearing protectors shall not be stored on the outer shell while working in the vicinity of an energized line or apparatus.
5. Ensure a chin strap is utilized when required, to ensure the correct fit and placement of hard hats during activities in high winds, tight spaces or awkward body positions that pose a risk to the PPE slipping or falling off.
6. To obtain optimum levels of protection against electric shock the headwear shall be clean. Headwear that is contaminated with oil, grease or other conducting chemicals, or that is fitted with inappropriate accessories may suffer a dramatic reduction in its protection capabilities against electric shock.
7. ***NB Power employee's name should be affixed to the hard hat, by means of a non-destructive non-conductive labeling tape. It is also recommended that the employee's job title be labeled.***
8. ***Ensure the placement of non-conductive stickers on hard hats does not negatively affect the safety performance of the hard hat. However, the location and quantity of stickers applied may prevent workers from correctly inspecting their equipment. The area of the helmet covered should be kept to a practical minimum to permit regular inspection of the helmet shell for signs of damage due to use or aging.***
9. ***Paints, inks, and inappropriate markings shall not be applied to hard hat, as it may have a detrimental effect on protective capabilities.***
10. Headwear can be worn under the hard hat as long they do not adversely restrict vision or affect the proper fit, form, function, or protective capabilities of headwear. Baseball hats are prohibited.
11. ***Ensure hard hats are replaced as per manufacturer's recommendations.***

References

1. OHS Act, Regulation 91-191, Section 40(1)(2)
2. HSEE-03-11 Personal Protective Equipment
3. CSA Standard Z94.1-05, “Industrial Protective Headwear”
4. ANSI Z89.1” American National Standard for Industrial Head Protection”
5. GS068-Arc Flash Prevention and Protection
6. T&D Arc Flash Standard

3.9 HEARING PROTECTION

1. Appropriate hearing protection shall be always worn where the exposure to noise exceeds 85 dBA, except for employees operating vehicles or other equipment where the use of hearing protection is not permitted. ***Greater than 100 dBA requires double hearing protection.***
2. Where employees may be exposed to hazardous noise and hearing protection cannot be used, the exposure to noise shall be controlled by limiting the duration of exposure to acceptable limits, as shown in the Table below, or by other effective controls.

Sound Level (dBA)	Maximum Unprotected Exposure Time
80	**24 hours**
82	**16 hours**
85	**8 hours**
88	**4 hours**
91	**2 hours**
94	**1 hour**
97	**30 minutes**
100	**15 minutes**

References

1. HSEE-03-11 Personal Protective Equipment
2. OHS Act, Regulation 91-191, PART V, Sections 29-33

3.10 RESPIRATORY PROTECTION

1. Approved respiratory protection shall be used when an employee is or may be exposed to harmful concentrations of contaminated air, or where a deficiency of oxygen exists or might exist.
2. Such respiratory protection shall only be used after alternative protection has been thoroughly evaluated (e.g. hazard elimination, design controls, or exposure management).
3. Employees using respiratory protection shall be trained and practiced on proper donning, use and care of the device and shall follow any other specific instructions of the ***supervisor.***
4. Employees using a respirator shall be medically fit to do so and shall immediately advise their supervisor of the existence of any medical condition that may affect their ability to wear a respirator. The medical condition will be assessed by a physician and the type of condition need not be disclosed to the supervisor.
5. Employees using any respirator shall successfully pass a fit test every 2 years for the same model and size to be used before using the respirator.
6. Anyone wearing a respirator with a tight fitting facepiece shall be clean shaven where the respirator seal meets the face without exception. All staff required to wear a respirator on an emergency basis, such as emergency responders and fire-fighters shall be always clean shaven where the respirator seal meets the face, while on the job.
7. Each site which handles air borne hazards shall have a Respiratory Protection Code of Practice.

8. For detailed information on the types of respirators required for specific hazards contact the Industrial Hygienist in the Total Health and Safety Department.

9. ***Respiratory protection is required for welding.***

Reference
1. OHS Act, Regulation 91-191, Part VII, Sections 45-47
2. HSEE-03-18 Respiratory Protection

3.11 PROTECTION FOR HOT WORK ACTIVITIES

1. An NB Power employee or contractor engaged in welding, cutting, burning or soldering operations shall wear flame resistant work clothing (minimum 100% cotton), an apron of leather or of other material offering equivalent protection.

2. Welders and their helpers shall wear protection appropriate for the job to guard the eyes, face, neck and hands when engaged in welding, cutting, or soldering operations. This protection shall include welding helmets, welding caps, insulated gloves, leathers, flash spectacles or goggles, and respirators where required.

Reference
1. OHS Act, Regulation 91-191, Part XVIII, Section 276

SECTION 4 – PROTECTIVE TOOLS AND EQUIPMENT

4.1 GENERAL STATEMENT

1. Employees who are required to use protective tools and equipment shall have the proper information, instruction and training as may be required to ensure the health and safety of the employees.
2. Employees shall use the protective tools and equipment in a manner so as not to endanger themselves or others.

Reference
1. OHS Act, Regulation 91-191, Part VII, Section 38(1), (2)

4.2 BARRICADES AND SIGNS

Every employee is responsible for adequately marking off with the appropriate tape and tag any area or equipment in which a hazard may exist. When a hazardous situation is identified, the appropriate supervisor shall be contacted and everyone working in the area shall be informed.

Proper barricades and signs shall be placed at openings and at hazardous and restricted areas to provide protection to NB Power employees, contractors and to the general public.

The use of barriers such as tape, rope, chain and tags are necessary to warn personnel of hazard(s) that exist in the work area. If relying on sentries, no tape is required. When relying on barrier tape, rope or chain, a barrier tag is required.

The type of hazard will indicate the type of barrier required i.e., physical barrier vs soft barrier (tape/rope).

Only authorized persons can enter the area with red barrier tape.

References
1. OHS Act, Regulation 91-191
2. NB Department of Transportation regulations
3. The Motor Vehicle Act (Consolidated to December 17, 2010)
4. HSEE-03-34 Barrier Tape and Tag

4.3 ELECTRICAL COVER UP / BARRIERS

Line Hose, Insulator Covers, Rubber Blankets and Line Guards and Physical Barriers

1. All protective equipment shall be used, maintained, and stored as per the manufacturer's instructions.
2. The ***supervisor*** shall ensure that all protective cover up equipment is kept clean and is thoroughly inspected visually prior to each use.
3. Line hose, insulator covers, rubber blankets, line guards, physical barriers, shall not be used to reduce the distances set out in Appendix 9.1.
4. Rubber blankets, insulator covers, line hoses shall be tested as per NB Power approved Standards.
5. Line hose, insulator covers, and rubber blankets shall always be secured in position.
6. Equipment found to have holes, snags, embedded material, or which is suspect for any reason, shall be removed from service immediately.
7. Protective equipment used to provide protection for members of the public shall be used only for that purpose. This protective equipment cannot be used to provide protection for live line work (rubber glove method).

8. When cover-up of the appropriate rating or other suitable barriers are installed, distances outlined in Appendix 9.1, Table 2 shall be used.
9. Cover-up equipment for 138 kV and above is not available. The employee shall not be able to reach, slip, touch, fall or bring any object within the distance set out in Appendix 9.1, Table 2.

Reference

1. NB Power Standard Work Methods
2. Appendix 9.1
3. Form 1155 - Request for Limited Work Site Protection

4.4 LIVE LINE TOOLS AND TREE PRUNERS

1. Live line tools shall be stored in dry secure areas when not in use and shall be transported in the portable containers designed to prevent and to provide protection from the weather.
2. Live line tools shall never be laid directly on the ground, i.e., telescopic hotstick, link stick, hot line puller handles.
3. The ***supervisor*** shall be responsible for ensuring that live line tools, and tree pruners are inspected and cleaned before each use with a wiping cloth supplied by the manufacturer.
4. If doubt exists as to the condition of any live line tool, it shall be exchanged for a tool in good condition and not returned to service until repaired and tested by authorized personnel.
5. Only fiberglass live line tools and tree pruners shall be used near live electrical lines and apparatus.
6. Live line tools and tree pruners shall be maintained in good condition and shall be tested every two years even if the tool appears to be in good condition. The expiry date shall be clearly shown on the equipment.

4.5 SPURS AND CLIMBING GEAR

1. Employees shall be responsible for the condition of their climbing equipment. Regular inspections of their body belts, retractable lanyard, pole strap, cross strap and climbers shall be carried out to ensure that the equipment is well maintained and meets the manufacturer's specifications.
2. Spurs shall be visually inspected before use.
3. Spurs with gaff lengths less than 32mm, measured on the underside of the gaff, shall be replaced.
4. Spurs shall not be worn while operating or riding in a vehicle, while performing ground work, or when working on ladders or in buckets.
5. All climbing gear such as pole straps, belts, harnesses shall be equipped with double locking snaps/carabiner.

4.6 BUCKET ESCAPE KIT

1. All employees required to work aloft in buckets must have an evacuation/ rescue plan established and documented on the tailboard before work begins (use of the bucket escape kit or use alternate means of rescue).
2. In the event of equipment failure, either from an engine or hydraulic malfunction, when emergency lowering is needed to store the boom, personnel shall be removed from the bucket before the device is lowered in the emergency mode. If the vehicle is equipped with an approved auxiliary power unit, employees may remain in the bucket.
3. When an employee is working alone, they shall take a descent device aloft a as part of the standard equipment used when working from a bucket.
4. ***The bucket escape kit must be inspected annually.***

Reference
1. OHS Act, Regulation 91-191, Section 113

4.7 FALL PROTECTION/ WORKING AT HEIGHTS

Fall-protection systems play an important role in protecting employees from injuries due to a fall. There are many different types of systems, including, fall-arrest systems and the use of warning lines and safety monitors. Falls can happen from ladders, permanent structures like roofs, and temporary structures such as scaffolds and other types of work platforms.

Employees shall continually use a fall-protection system when an employee works from

a) An unguarded work area that is:

- ***3 m or more above water or the nearest permanent safe level,***
- ***Above any surface or object that could cause injury to the employee upon contact, or***
- ***Above any open top tank, bin, hopper or vat***

b) When a WorkSafeNB officer determines it necessary to use

c) When working in an aerial device

There is a regulatory requirement for a code of practice to be written when a fall-protection system is required if,

a) the workers are working from a height of 7.5 m (25ft.) or more,

b) an officer (WorkSafeNB) requires that the code of practice be written.

The best forms of fall-protection systems are those that prevent employees from falling and include guardrails (passive system) and travel restraint (active system). As a result, the regulation requires employers to first consider these systems ahead of other systems.

4.7.1 Suspension Trauma Straps

Suspension trauma can be fatal.

Suspension trauma straps help prevent injuries and avoid excessive discomfort when you are suspended in a full body harness. Simply deployed, the straps allow a worker to step into the strap and stand up to relieve the pressure on the harness leg loops. A simple addition to any fall protection harness, these straps give much needed relief while a rescue operation is carried out.

Note: Suspension Trauma Straps is a mandatory piece of equipment when wearing a harness when working at heights.

4.7.2 Lanyards

Proper selection of lanyards is critical for proper travel restraint and fall arrest:

- ***Travel restraint needs to effectively keep workers from a leading edge.***
- ***Fall distance must be calculated and the proper lanyard length must be selected.***
- ***Fall arrest lanyards must have an energy absorber rated for the weight of the user.***
- ***Self retracting lines (SRLs) must be used in the proper orientation (some must have anchors waist high or higher)***
  - ***Self retracting lines ledging edge (SRL-LEs) must be used where there is a cut potential (aerial lifts, scaffolding, etc.)***

References
1. OHS Act, Regulation 91-191, PART VII, Sections 49 and 50 and 232
2. HSEE-03-16 Fall Protection

4.8 MEASURING TAPES AND RULERS

Only non-conductive tapes and rulers supplied by NB Power shall be used near live lines or electrical equipment. Cloth tapes shall be carefully inspected for moisture and mildew before being used.

NOTE: Cloth tapes with metal reinforcing shall be considered metallic tapes. Very close examination is necessary to detect the presence of metal reinforcing in cloth tapes.

4.9 GAS DETECTORS - CONFINED SPACE ENTRY

1. Electronic gas detectors are used to analyze the air in all confined spaces prior to entry to help ensure a safe atmosphere. Continuous monitoring is required while the confined space is occupied. The safety or life of the workers entering a confined space may depend on the proper function and use of these instruments. The operator shall observe all precautions and understand the operation of the instrument in use.
2. Before doing atmospheric testing with a gas detector, the operator shall be adequately trained so that the operation and limitations of the instruments are fully understood. Upon taking possession of a gas detector, the operator shall verify that the instrument has been calibrated as required by the manufacturer and work group policy. Every shift the detector is used it shall be functionally tested.
3. Function Test of a Gas Detector

   A function test is a test performed prior to the first use of an instrument on each shift, to verify the response and function of the instrument. This involves subjecting the instrument to a certified span gas and checking the instrument's reading, alarm settings and audible and visual alarms to determine if it is operating within prescribed limits. A function test has been successful if the reading is within the alarm indicators are functioning correctly.

   If the unit passes the function test this shall be recorded on the Confined Space Entry Form. If the function test fails, the unit shall be calibrated before use.
4. Calibration of a Gas Detector

   Calibration is performed at least monthly or any time the instrument fails a function test. Calibration physically sets the instrument zero and span as per the manufacturer's recommendations.

References

1. HSEE-03-17 Confined Space Entry
2. OHS Act, Regulation 91-191, Sections 262 – 272

4.10 FIRE EXTINGUISHER MAINTENANCE

1. Monthly

   All portable fire extinguishers shall be inspected monthly by a competent person and the inspection shall be recorded on a tag attached to the extinguisher or other suitable means. The following items shall be examined during the inspection and corrective action initiated for any deficiency.

   - extinguisher is present and mounted securely
   - access and visibility are not obstructed ***within a 3 foot radius***
   - operating instructions are legible and facing out
   - ***safety seal on pin displays the current year and tamper indicators are present and intact. Pin is in place to prevent accidental discharge*** check fullness by weighing or "hefting"
   - check for obvious damage, corrosion, leakage, or clogged nozzle
   - pressure gauge reading or indicator is in operable range or position
   - condition of tires, wheels, carriage, hose and nozzle on wheeled units

- WHMIS label is in place
- inspect that the area where it is mounted is dry, non-corrosive environment, not susceptible to mechanical injury or physical damage

2. Annually

   All portable extinguishers shall be inspected annually by a ***New Brunswick Fire Marshal's Office certified i***nspector.

   Carbon dioxide extinguishers shall have the contents verified by weight.

   Carbon dioxide extinguishers equipped with a hose and nozzle, or horn shall have an electrical conductivity or continuity test performed on the hose and the test result will be indicated on a label attached to the hose.

3. Transportation

   Transportation of several fire extinguishers exceeding the operational requirements of the vehicle shall comply with the Transportation of Dangerous Goods Act and Regulations. ***The operator must be trained in TDG.***

References

1. NFPA 10, Standard for Portable Fire Extinguishers, 2010 edition.
2. Transportation of Dangerous Goods Act and Regulations

SECTION 5 – TOOLS AND EQUIPMENT

5.1 GENERAL STATEMENT

Employees shall not use tools and equipment unless provided with information and training on the proper use of the tool or the equipment. ***Employees shall use tools and equipment that are maintained in good working condition and are used for the purposes for which they are designed.***

Power tools with trigger locks are not to be used.

5.2 TRAINING, COMPETENCE AND SAFE OPERATION

1. All employees shall be aware of any hazards associated with the use, handling, storage, disposal and transport of any tool, equipment, machine, or device that they may be used in the course of their employment.
2. Only competent employees shall operate any type of tool, equipment, machine or device. No employee will be requested to operate any type of tool, equipment or device, if that employee is not competent. In this context an employee is competent because of such factors as knowledge, training, certification and experience, to operate and use tools and equipment in a manner that will ensure their personal safety and the safety of co-workers.
3. Supervisors shall be responsible for the condition of all tools and equipment used by NB Power employees or contractors under their direction and shall ensure that adequate periodic inspections are conducted. Tools and equipment considered to be defective or unsafe in any way shall be immediately taken out of service, repaired or replaced.
4. Tools and equipment shall be stored and handled so that they will not cause injury or be damaged.
5. All workers' tools, regardless of ownership, shall be subject to regular inspection and audit.

References

1. OHS Act, Regulation 91-191, Sections 9(2) (b), (c)
2. OHS Act, Regulation 91-191 Part 1, Section (2)
3. OHS Act, Regulation 91-191, Part IX, Section 80-82
4. HSEE-03-21 Safety Training
5. HSEE-03-30 Safe use of Portable Hand Tools

5.3 CHAIN SAW, BRUSH SAW, CLEARING SAW, WOOD CHIPPER OPERATIONS AND EQUIPMENT

1. Employees assigned to operate chain saws, brush saws or clearing saws shall be trained in their use and shall wear all appropriate personal protective equipment per section 3.2.
2. An employee shall not operate, nor shall an employer permit an employee to operate, a chain saw, brush saw, or clearing saw while working alone. Note: In case of an emergency, emergency responders on site can be the second person and this would not be considered as working alone.
3. All chain saws shall be CSA approved or meet a standard offering equivalent protection and maintained as per the manufacturer's recommendations.
4. All chainsaw operators shall have readily available on site a suitable fire extinguisher, first aid supplies and a pressure bandage that shall be located on the operator.

References

1. OHS Act, Regulation 91-191. Part VII, Section 38 and Part XXI, Section 346, 351(1) and 352

5.4 GUARDS ON MACHINERY AND EQUIPMENT

1. Machines and equipment having exposed moving parts that constitute a hazard to an employee shall be equipped with guards that shall provide protection against contact with moving parts.
2. Guards shall be maintained in good working condition.
3. ***Removal of guards is prohibited without the approval of the supervisor.***
4. Where a guard that does not impede the work of the machinist can be installed (especially over the jaws and chuck), the employer is responsible to ensure a safeguard is installed.

   If a guard is not an option, a safe work code of practice must be developed and discussed with the machinist before work is done.

Reference

1. OHS Act, Regulation 91-191, PART XVI, Sections 242 and 243
2. HSEE-03-57 Shop Equipment Machine Tool Guarding

5.5 HAND TOOLS

1. All tools shall be inspected before they are used.
2. Defective tools shall be immediately removed from service, tagged and reported to the supervisor.
3. Tools shall not be thrown from place to place or from person to person. Tools that shall be raised or lowered from one elevation to another shall be placed in tool buckets or firmly attached to handlines or tag lines.
4. Employees shall use tools that are in good condition and only for the purpose for which they are designed. Any fabricated tools must be engineered, designed, manufactured and tested with due consideration for the limits, stresses and forces to which it will be subjected.
5. Tools with factory installed guards having exposed moving parts that constitute a hazard to an employee shall be used.
6. Portable grinders shall be equipped with guards and a handle as per manufacture recommendations and shall not be operated without them. You must wear safety glasses and a face shield when using a portable grinder.
7. Grinder disks shall match specifications of the grinder (i.e.: speed) and shall be properly selected for the task.

5.6 VIBRATION

Vibration safety in the workplace includes reducing exposure to vibrations and protecting workers from the health risks they can cause:

1. Hand-arm vibration

Workers should not be exposed to more than 5 meters per second squared (m/s2) of vibration over an 8-hour day. Workplaces can reduce exposure by:

- ***Educating workers on the signs and symptoms of hand-arm vibration syndrome (HAVS)***
- ***Purchasing tools with lower vibration emissions***
- ***Regularly maintaining tools***

2. Whole-body vibration

Workers are at greatest risk of health effects from whole-body vibration when the vibration is:

- ***High in magnitude***
- ***Frequent and regular***
- ***Has a dominant frequency below 20 Hz***
- ***Severe or jolty***
- ***From vehicle seats or machinery floors***

- ***Can lead to back pain, spinal injuries, and posture issues***

3. Can be reduced by:

- ***Limiting time spent on vibrating surfaces***
- ***Mechanically isolating the vibrating source***
- ***Ensuring equipment is well maintained***
- ***Installing vibration damping seats***
- ***Providing rest breaks***
- ***Training on proper seating posture and back support***

4. Other prevention measures

Workers can also reduce exposure by:

- ***Using tools with lower vibration levels***
- ***Keeping hands warm***
- ***Using anti-vibration gloves***

Reference

1. OHS Act, Regulation 91-191, Part 1 Sections 80-83
2. HSEE-03-30 Safe use of Portable Hand Tools

5.7 LADDERS

1. Portable Ladders:

a) All portable ladders shall be constructed and used in accordance with the Regulation 91-191 under the New Brunswick Occupational Health & Safety Act.

b) NB Power employees and contractors shall use only approved fiberglass ladders near energized lines and in locations which contain live electrical apparatus. This includes battery and computer rooms.

c) Perform a pre-use inspection before any ladder shall be used.

d) Ladders must be secured against movement. If the ladder cannot be tied off, then it shall be always held in place by another employee when in use.

e) The bottom of the portable ladder shall be set one foot out for every four feet up.

f) When extending the ladder to working height, both locking dogs on the moving section shall be engaged on a rung.

g) Portable extension ladders shall have no more than three sections, and when extending a portable extension, maintain a minimum overlap as follows:

- Where the ladder is 11 m or less, the overlap shall be 1 m.
- Where the ladder exceeds 11 m and is 15 m or less, the overlap shall be 1.25 m.
- Where the ladder exceeds 15 m and is 22 m or less, the overlap shall be 1.5 m.

h) Side rails of the ladder shall extend at least 1 meter above any platform or landing to which the ladder is a means of access.

i) Portable ladders shall never be used as a horizontal work platform unless specifically designed for that purpose.

j) Portable ladders shall not be placed in front of a door that opens toward the ladder unless the door is locked, blocked or guarded.

k) Portable ladders shall be used by only one person at a time.

l) When ascending or descending a portable ladder, the employee shall face the ladder have both hands free for climbing. i.e., maintaining three-point contact, this means two hands and one foot, or two feet and one hand, on the ladder always. A handline shall be used for handling materials.

m) When working from a portable ladder, the task shall be light and of short duration. The employee will generally have one hand free to hold on to the ladder or another support**.**

n) Substitutes for portable ladders, such as boxes, chairs and crates, shall not be used.

o) Defective ladders shall be taken out of service and either tagged for repair or scrapped.

p) Use the belt buckle rule: keep your belt buckle always positioned between the side rails, which will maintain your center of gravity.

q) Working from portable ladders for extended periods shall be avoided and alternate methods to provide access shall be considered.

r) When both hands need to be free for a short duration, two feet and your body must be supported by the ladder.

s) ***If an opening leads to a stairway or ladder, the opening must be guarded by guardrails on all exposed sides, except for the side leading to the entrance to the stairway or ladder.***

t) ***Alternative equipment (e.g., bucket truck, self-propelled elevating work platforms) shall be considered when appropriate, due to the hazards of erecting and dismantling scaffolds.***

2. Fixed Ladders:

a) Fixed ladders shall be inspected for defects before use. If they cannot be repaired the ladder shall be destroyed and replaced.

b) Fall arrest system shall be worn when climbing above 6 meters on fixed ladders unless the ladder is equipped with a ladder cage.

c) If a fixed ladder equipped with a ladder cage is more than 9 meters in height, it shall be equipped with rest platforms at intervals of no more than 9 meters.

d) Side rails of a fixed ladder shall extend at least 1 meter above any platform or landing to which the ladder is a means of access

e) ***Do not have any rungs that extend above a landing and is placed in such a way that an adequate landing surface that is clear of obstructions is available at the top and bottom of the ladder for access and egress.***

f) Auto closing gates or chains must be in place. Auto closing gates (newly constructed fixed ladder systems) or chains (legacy asset fixed ladders) must be in place.

g) All fixed ladders shall be constructed and used in accordance with the Regulation 91-191 under the New Brunswick Occupational Health & Safety Act ***and CSA Standard Z11-12 (R2017) Portable Ladders***.

3. Step Ladders:

NB Power employees and contractors shall use only approved fiberglass step ladders in locations which contain live electrical apparatus. This includes battery and computer rooms.

Proper Set Up and Use:

a) Make sure step ladder is fully open, and spreaders locked

b) Set all feet on firm, level surfaces. Do not place on unstable, loose, or slippery surfaces.

c) Place step ladder where access is not obstructed.

d) Do not place in front of unlocked doors.

e) Step ladders shall not be used on scaffolds.

f) Climb only front side of step ladder.

g) Face step ladder and use both hands when ascending or descending.

h) Do not overextend sideways. Use the belt buckle rule: keep your belt buckle always positioned between the side rails, which will maintain your center of gravity.

i) Do not climb, stand, or sit above the second step from top, on the pail shelf, or spreader braces.

j) Do not straddle front and back. Do not climb from one step ladder to another.

k) Avoid pushing or pulling off to side of the step ladder.

l) A step ladder shall not be used as an extension ladder unless designed for that purpose.

4. Ship's Ladders

A ship's ladder is a specific style of stairway initially used on ships. Since ships have limited deck space, ship builders had to design stairs with unusually steep slopes. These stairs became known as ship's stairs or ship's ladders. As a result of their design (especially the steep slope they are usually built to), ship ladders may resemble fixed ladders.

As a result, WorkSafeNB will allow service stairways or fixed ladders to be substituted by ship ladders under the following conditions:

A ship's ladder must:

- ***Be designed so the angle between the side rails and the horizontal is between 50° and 70°. The preferred angle is in the range of 60° to 68°.***
- ***Serve only a single platform or landing and have a maximum height of 4 metres (12 feet).***
- ***Have tread width of at least 130 millimetres (mm) (5 inches), with a non-skid finish, uniformly spaced (rise) at no more than 305 mm (12 inches). Treads should be at least 430 mm (17 inches) long, but not longer than 630 mm (24 inches).***
- ***Have a minimum design working load of 1.1 kilo newton (kN) (250 pounds) applied uniformly to a 90 mm (3.5 inch) strip across the centre of the tread.***
- ***Have handrails provided on both sides of the ladder at approximately 900 mm (36 inches) above the tread nosing.***
- ***Have a safety guard installed parallel to the slope of the ladder and offset approximately 150 mm (6 inches) from the rear of the treads. (This guard is to stop a worker's leg from passing through to the backside of the ladder if a foot slips off the back side of the tread.)***

In addition, it should be noted that a ship's ladder is a permanent load-carrying structure and needs to be properly engineered. Design drawings and specifications should show all information necessary for the fabrication and installation of the ship's ladder, including details on how it is to be secured in place. The completed installation will need to be certified by a professional engineer as being fabricated and installed in accordance with good engineering practice.

Note:

Ladders shall be clearly and permanently marked in English and French with at least the following information:

(a) manufacturer's name or trademark.
(b) date of manufacture.
(c) nominal length.
(d) maximum extended length (where applicable), and
(e) grade, projected use, and load rating

Reference

1. OHS Act, Regulation 91-191, Parts X and XI, Sections 121-126
2. CSA standard Z11-12 (2017)
3. HSEE-03-56 Ladders (Safe Use, Selection and Inspection)

5.8 SCAFFOLDS AND WORK PLATFORMS

1. All scaffolds shall be erected according to specific written instructions supplied by the manufacturer/supplier.
2. ***Scaffolders must be 100% tied off during builds and use lanyards of suitable lengths accounting for fall distances (SRL-LEs are recommended).***
3. ***An employee who uses a scaffold shall***

   a) visually inspect the scaffold before each use, and
   b) report to the employer any situation or condition that may make the scaffold unsafe to use and, if necessary, not use the scaffold.
4. Review inspection tag located on scaffold before use.
5. Take the necessary steps to ensure falling objects prevention is in place using barricades, coverings, hand tool tethers, as necessary.
6. Only competent persons experienced in erecting and dismantling scaffolds shall supervise or undertake the erection or dismantling to ensure it is carried out according to acceptable practices.
7. Ladder cages where required shall be used where the ladder height exceeds 6m. Ladder height is measured from grade, rest platform, or work platform to the elevation of the next rest or work platform.
8. Vertical ladders shall be securely fastened to the scaffold at the top and bottom of the ladder and at intervals according to the requirements of the manufacturer.
9. Auto closing gates must be present at all openings.
10. Ladders must extend at least 0.9 m (3 ft) above the uppermost platform that is accessed.

Reference

1. OHS Act, Regulation 91-191, Part XI, Section 102(2) and Sections 127 to 145 inclusive
2. HSEE-03-45 Scaffolding

5.9 STORAGE BATTERIES

1. Storage batteries that discharge flammable gases shall be kept in rooms that are:

   a) adequately ventilated to prevent the accumulation of flammable gases,
   b) signposted at the entrance with signs prohibiting smoking or open flames,
   c) not used for general storage.
2. Work that requires an open flame or that may cause sparking shall be supervised by a competent person. The work may only proceed after the area has been thoroughly ventilated and tested to ensure the absence of explosive conditions.
3. When handling storage batteries or electrolyte, acid resistive gloves, aprons, goggles and face shields shall be available and worn.
4. When diluting concentrated sulphuric acid for a storage battery, the acid shall always be added to the distilled water. Reversing this procedure may result in an explosion.
5. An approved primary emergency eyewash station shall be available in or near each battery room.
6. Spilled electrolyte shall be cleaned up promptly.
7. Only competent persons may change or charge a storage battery.

Reference
1. OHS Act, Regulation 91-191, PART VIII, Sections 70 – 73
2. American National Standard for Emergency Eyewash and Shower Equipment ANSI/ISEA standard Z358.1-2009,

5.10 ELECTRIC POWER TOOLS

1. All electric power tools shall be Canadian Standards Association (CSA) or Underwriters Laboratories of Canada (ULC) approved.
2. ***An electric portable power-operated hand tool must be double insulated or bonded to ground or, if it is not double insulated and it is not practical to bond to ground, is equipped with a double insulated portable ground fault circuit interrupter of the class A type.***
3. Metal casing of portable electric tools shall be effectively grounded when connected to a power source unless the tool is an approved type.
4. A Ground Fault Circuit Interrupter (GFCI) shall be used.
5. Employees need to be aware of their power tool limitations and potential hazards. These tools shall be used and maintained with care for their maximum and safest performance. Follow the manufacturer's instructions as to their safe use.
6. Ensure damaged electrical tools such as frayed cords, missing ground prong are removed from service.
7. Electrical cords are only to be used for temporary needs and must be laid out in a safe ***manner to prevent tripping hazards and damage to the cord.***

Reference
1. OHS Act, Regulation 91-191, Part 1X, Section 83, 84, 85 and 86
2. HSEE-03-30 Safe use of Portable Hand Tools

5.11 FIXED MACHINE TOOLS

1. All shafting, wheels, gears, flywheels and other moving parts of rotating machinery within reach shall be guarded.
2. Fixed machine tools shall only be operated by competent employees and only when the tools are in good working condition with all guards in place. These tools shall be used only for the purpose for which they are designed and only after the operator has determined that all other employees are in the clear.
3. When setting up work on fixed machine tools, the work shall be bolted or clamped securely.
4. Fixed machine tools shall be turned off when work is finished and shall not be left unattended when they are in operation.
5. Grinders shall be equipped with shields, material rests, and guards.
6. Rests used on grinding machines shall not be set more than 3mm (1/8 inch) from the face of the grinding wheel.
7. Appropriate eye and face protection shall be always worn.
8. Grinder disks shall match the specifications of the grinder (i.e.: speed) and shall be properly selected for the task.

Reference
1. OHS Act, Regulation 91-191, Part XVI Section 242 and 244
2. HSEE-03-57 Shop Equipment Machine Tool Guarding

5.12 HOISTING AND RIGGING

This applies to all personnel inspecting, operating, maintaining cranes and hoisting apparatus and perform rigging and lifting operations on behalf of NB Power. Cranes and hoisting apparatus include overhead cranes, gantry cranes, monorails, jibs, and hoists, as well as manual chain-falls.

1. All hoisting apparatus shall be inspected as identified in Regulation under the New Brunswick Occupational Health & Safety Act, in manufacturer's specifications and applicable NB Power Standards.
2. A designated competent person shall be responsible for the safe loading and use of ropes, chains, cables, slings jacks, skids and other hoisting and rigging apparatus.
3. Hoisting equipment shall only be operated by competent employees.
4. Prior to using any hoisting apparatus, the safe working load limits shall be established and never exceeded.
5. All hoisting apparatus shall be inspected by a competent employee: before it is first put into use prior to initial use and "annually" thereafter and after any incident that may have damaged some part of the hoisting apparatus.
6. Hoisting apparatus shall be inspected prior to each use. This inspection shall be logged for hoisting apparatus 2 ton and above.
7. ***Complete a*** critical lift plan (Form 1372) ***if*** required ***as per HSEE-03-12.***

Reference
1. OHS Act, Regulation 91-191, Part XV
2. HSEE-03-12 Rigging and Lifting Operations

5.13 ROPES, SLINGS, AND CHAINS

1. Supervisor shall ensure that employees are competent in the proper use of knots, ties, hitches, and safe methods of hooking and slinging required in their work.
2. All ropes, cables, chains, and slings shall be discarded when they have worn or deteriorated to the point where their safe use may be questionable. In case of missing tags, slings shall be sent for recertification.
3. Wire ropes or cables shall not be allowed to kink as this weakens them.
4. Slings shall not be used under the following conditions:
   a) If the load to be lifted has sharp corners, in which case softeners shall be used to protect the sling.
   b) If the sling shows evidence of excessive wear.
5. Knots in slings are prohibited.
6. Chain Slings must be removed from service if any of the following conditions are present:
   a. Missing or illegible sling identification.
   b) Cracks or breaks
   c) Excessive wear, nicks, or gouges.
   d) Stretched chain links or components
   e) Bent, twisted, or deformed chain links or components.
   f) Evidence of heat damage.
   g) Excessive pitting or corrosion.
   h) Lack of ability of chain or components to hinge (articulate) freely.
   i) Weld splatter.
7. Chain sling shall be a minimum of grade 80 chain.
8. Pre-Use inspections are required of all load-carrying equipment, including sheaves, blocks, rings, shackles, hooks, chains, and slings.
9. ***All lifting gear must have a documented annual inspection.***
10. ***All lifting gear must be used as intended by the manufacturer.***

Reference
1. OHS Act, Regulation 91-191, Part XV
2. ASME B-30.9 and B30.26 series
3. HSEE-03-12 Rigging and Lifting Operations

5.14 HYDRAULICALLY OPERATED TOOLS AND EQUIPMENT

1. Hydraulic tools shall be used in accordance with manufacturers' recommendations.
2. Hydraulic tools shall be inspected prior to each use.
3. Only appropriate fittings and couplings that meet the manufacturers' specifications shall be used on hoses.
4. The only shut-off to be used is one that is readily accessible to the user of the tool.
5. Hoses shall not be run across aisles, travel ways or work areas thereby creating a hazard to employees.
6. When hydraulic tools are used next to an energized line or apparatus, only hydraulic hoses that have been dielectrically tested shall be used in conjunction with the tool.
7. Only a competent employee shall replace or inspect hydraulic tools and equipment.
8. Hoses shall not be checked for leaks using bare or gloved hands.

5.15 AIR-OPERATED TOOLS (pneumatic)

1. Air operated tools shall never be pointed at another person.
2. Air operated power tools shall be secured to the hose by a positive means to prevent the tool from becoming accidentally disconnected.
3. Compressed air shall not be used for blowing dust or other substances from clothing being worn by workers.
4. Employees shall wear appropriate personal protective equipment when exposed to hazards created by dust, metal cuttings or other substances being blown from equipment, material or structures using compressed air, compressed gases or steam.
5. Hearing protection is required when using air operated tools when the noise level exceeds 85 decibels.
6. The manufacturers' safe operating pressure for hoses, pipes, valves, filters and other fittings shall not be exceeded.
7. Air operated tools shall only be operated in accordance with manufacturers' instructions.
8. Metal-reinforced hoses shall not be used near energized equipment.
9. Air operated power tools shall not be used in the proximity of energized lines or apparatus.
10. Whipchecks shall be used on connections where appropriate.

Reference
1. OHS Act, Regulation 91-191, Part IX, Section 83-86
2. HSEE-03-30 Safe use of Portable Hand Tools

5.16 POWDER-ACTUATED TOOLS

1. The tool, powder load and fastener shall be an NB Power approved tool and shall meet the requirements of ANSI A10.3-1995 Standard.
2. The operator of a powder-activated tool shall be trained in the use of the specific make and model of the tool to be used and be in possession of a valid operator's certificate, competent to use the tool, and authorized to use the tool.
3. All powder-actuated tools and their explosive charges are kept in a storage area that is accessible

only to persons who are authorized to handle them.

4. Persons using powder-actuated tools shall be fully knowledgeable about the Regulations governing them.
5. The tool shall be used as per the manufacturer's instructions.
6. Misfires shall be dealt with as per manufacturer's recommendations.

References

1. OHS Act, Regulation 91-191, Sections 87-90
2. ANSI Standard A10.3-1995
3. HSEE-03-30 Safe use of Portable Hand Tools

5.17 KNIVES

Knives come in many different shapes and forms, each one designed for a specific purpose or job. Selecting the correct knife or alternative cutting tools for the job is very important to ensure that the job can be completed correctly and safely and reduce the risk of accidental injury. Employees are required to use appropriate hand protection as required for the task. Ensure the path of the blade is visualized before making the cut (line of fire).

SECTION 6 – VEHICLES, TRANSPORTATION

6.1 GENERAL

1. Employees shall operate NB Power vehicles only when in possession of a valid driver's license of the appropriate class.
2. Vehicles shall be kept in good operating condition and driven in a safe, courteous manner.
3. The provisions of the Motor Vehicle Act apply to any use of road vehicles, regardless of whether they are operated on public roads or private property.
4. Before operating an NB Power vehicle, each driver shall ensure that it is in a safe operating condition. The following precautions shall be observed in particular:
    a) Brakes, clutch, horn, signal system, all lights and windshield wipers shall be tested.
    b) The driver shall check that the tires are in good condition and properly inflated.
    c) The driver shall also check emergency equipment such as first aid kits, reflective triangles, and fire extinguisher. Any missing or defective equipment shall be reported immediately. First aid kits and fire extinguishers shall be mounted in an accessible location and away from the source of ignition. Fire extinguishers shall be dismounted once a month and turned upside down to loosen the contents.
    d) The driver shall ensure that all windows are clear of snow, ice and that the windshield has defrosted before moving.
    e) Employees shall check to see that the boom and bucket have been stowed.
    f) Outriggers shall be fully retracted prior to moving a vehicle.
5. All vehicles, excluding ATV's and passenger cars shall be equipped with back-up warning devices.
6. Before moving a parked vehicle, the driver shall do a vehicle circle check and observe front and rear to ensure that persons and objects are clear.
7. Drivers shall not operate the vehicle in any building except when driving in or out unless they are in a garage where the exhaust gas is carried directly to the outside and all ventilation systems are functioning.
8. Headlights and taillights shall always be on and free of obstructions when the vehicle is in motion to increase visibility in all weather conditions.
9. ***Electronic Logbooks (DVIR's) are required for vehicles:***
    - ***Applicable to vehicles 4,500 kg and over.***
    - ***See vehicle registration to determine the 4,500 Kg threshold.***
    - ***If hauling a trailer and the combined of truck and trailer is over 4,500 kg***
    - ***Equipped with either personnel carrying device or an aerial lifting device.***
    - ***The operator shall be responsible to ensure, where applicable, the DVIR is completed daily or before each shift.***
10. Seat belts shall be worn by all occupants while the vehicle is in motion.
11. All vehicles and vehicle compartments shall be locked while unattended and in unsecured areas. Vehicle keys must not be left in the ignition.

12. ***Vehicles equipped with Global Positioning Software (GPS) can detect the following information:***

    - ***Location***
    - ***Driving Time***
    - ***Engine Run Time***
    - ***Engine Idling Time***
    - ***Engine Fault Codes***
    - ***Road Speed***
    - ***Engine Speed***
    - ***Vehicle State (Oil Level & Temp, Coolant Level & Temp, Odometer)***

    The GPS hardware is plugged into the vehicles Engine Control Module (ECM), the ECM is an onboard computer that collections multiple data points to help manage the health and reliability of the vehicle.

13. ***Employees are required to be trained and competent on the type of vehicles they are assigned to operate.***

14. ***Clearance stickers (height) will be affixed to every high sided vehicle(s) as per policy. The vehicle operator must understand the clearance (travel) height of the truck. Please note the height is posted in both Standard American English (SAE) in feet / inches and Metric in meters. Each truck can be different it is important for the operator to understand the total height of the vehicle they are driving.***

References

1. Motor Vehicle Act, Chapter 17, Section CARBON MONOXIDE (consolidated to December 17, 2010)
2. OHS Act, Regulation 91-191, Part XV
3. HSEE-03-73 Fleet Safety
4. HSEE-03-27 Mobile Communication Devices

6.2 BACKING UP / PARKING

1. Whenever possible on NB Power premises, vehicles ***(personal and work)*** shall be positioned to avoid the necessity of reversing.

2. Extreme caution shall be exercised when backing a vehicle, to avoid injury to persons and to prevent property damage. If another employee is present, they shall be stationed at the rear of the vehicle to assist the driver in backing the vehicle safely. If another employee is not present, the driver shall do a vehicle circle check prior to backing the vehicle.

3. Backing up on main thoroughfares and roadways shall not be undertaken unless a competent person is present and is directing the reversing and redirecting of other traffic.

4. All vehicles shall be parked in accordance with the provisions of the New Brunswick Motor Vehicle Act and all local ordinances, except in emergency situations or where authorized work necessitates that a vehicle be parked otherwise.

5. When parking on a hill or steep angle is it recommended that the operator use the parking brake to ensure there is no vehicle movement while parked.

6. When a motor vehicle 1 ton and above is disabled or otherwise left standing upon a roadway or the shoulder, the driver shall display three portable reflectors on the edge of the roadway 30 metres in advance of the vehicle and one at the rear of the vehicle and one at the traffic side approximately 5 metres to the rear of the vehicle.

7. The ignition key shall always be removed when the vehicle is left unattended.

8. Wheel chocks are not required when our vehicles are not in use and are parked on level surfaces.

Reference:
1. Motor Vehicle Act, Chapter 17, Section 194, 243, 244, and 245 (consolidated to December 17, 2010)
2. HSEE-03-73 Fleet Safety

6.3 FORKLIFT TRUCKS

1. Forklifts shall only be operated by competent persons who have successfully completed a recognized forklift operator course which includes theory and practical portions.
2. Forklifts ***and attachments*** are to be used as per manufacturer's instructions.
3. Brakes and controls shall be tested prior to use. Equipment with faulty brakes and mechanical or electrical defects shall not be operated.
4. Pre-inspection logbooks must be completed before each shift, if in use.
5. Forklifts shall not be fueled with the engine running.
6. Loaded or empty, forks should be carried as low as possible, but high enough to clear uneven surfaces.
7. Forklifts propelled by internal combustion engines shall not be operated near areas containing explosive dust or flammable vapours or in buildings where ventilation is not sufficient to eliminate the hazards of exhaust fumes. Forklifts operated inside buildings shall be maintained to minimize the emission of carbon monoxide.
8. Battery-powered forklifts shall be charged in accordance with approved procedures in a well-ventilated area. No smoking, welding or flame cutting shall be permitted in the vicinity of a forklift truck on charge on inclines, forklifts shall be driven with the load on the upgrade side of the driver, whether ascending or descending.
9. ***All employees that will be using a forklift attachment will be trained on the pre use inspection, proper installation, and safe operating procedures for using the device.***
10. Seat belts are required to be worn.
11. ***If the circumstances permit, an employer shall provide designated pedestrian walkways to separate pedestrian traffic from areas in which industrial lift trucks are in operation.***
12. ***If the circumstances do not permit an employer to provide designated pedestrian walkways, an employer shall implement at least one of the following safe work procedures to minimize the possibility of collision:***

    - ***the use of a traffic control system;***
    - ***the enforcement of speed limits for industrial lift trucks; or***
    - ***a requirement for a pedestrian and an industrial lift truck operator to acknowledge each other's presence before the pedestrian proceeds through the area.***

    In order to improve an industrial lift truck operator's view of the area, the operator may, if there is no pedestrian traffic in the area, travel forward with an elevated load provided that the operating conditions are maintained to ensure the stability of the truck and compliance with the manufacturer's specifications.

References
1. OHS Act, Regulation 91-191, PART XV, Section 216 and 217
2. HSEE-03-66 Lift Truck Operations

6.4 HELICOPTER SAFETY

1. General

   a) Prior to approaching or boarding a helicopter the person in charge shall ensure that a comprehensive pre-flight briefing is conducted jointly by the person in charge and the pilot. This briefing shall include all information as is required to ensure that all passengers fully understand the potential hazards associated with the use of a helicopter. Emergency devices such as door releases will be pointed out to the workers and any action to be taken in an emergency will be fully discussed.

   b) The crewing, maintenance and operation of helicopters shall always be in strict conformity with the Ministry of Transport Canada Regulations. The pilot's authority shall not be challenged on matters of helicopter flight. Their direction shall be promptly adhered to.

2. Approaching

   a) Employees shall not leave, approach or board a helicopter until signaled to do so by the pilot.
   b) Whenever approaching or leaving a helicopter while blades are rotating, all workers shall remain in full view of the pilot and keep in a crouched position. Workers shall avoid the area from the cockpit area of cabin, rearward, unless authorized by the pilot.
   c) No worker shall approach or leave a helicopter from an uphill direction.

3. In Flight

   Personnel shall wear the seat belt and/or shoulder harness provided, properly fastened, always while on board the helicopter.

4. Equipment

   Cargo shall be loaded and secured in accordance with the pilot's instructions.

Reference

1. Ministry of Transport Canada Regulations
2. Canadian Aviation Regulation 2010-2

6.5 CRANES, DERRICKS, MOBILE HOISTING EQUIPMENT AND AERIAL DEVICES

(including those with Hoisting Capabilities)

1. Only competent persons shall operate this equipment.
2. A minimum of two-wheel chocks shall be used.
3. Only authorized persons shall be permitted in the cab of the equipment.
4. Load limits, as specified by the manufacturer, shall not be exceeded under any circumstance. Shock loading (sudden starts and stops) of the equipment shall be avoided unless specifically designed for that purpose.
5. An employer shall ensure that the operator of a hoisting apparatus or aerial device with hoisting capabilities has sufficient information to enable the operation to determine the load that the hoisting apparatus is capable of hoisting safely under any operating condition and the operator shall use such information prior to lifting.
6. Where cranes, derricks, or aerial devices are equipped with outriggers, outrigger pads shall be placed, and the outriggers and/or stabilizers shall always be lowered and set before the boom is raised from the travel position. For NB Power Fleet, outrigger pads shall be 3 times larger in area than the float and completely support the float. For contractors, we will accept the manufacturer's outrigger pads which are approved and tested for stability according to code.
7. When cranes, derricks or aerial devices shall be moved, the boom shall be stored in the travel position and the outriggers shall be retracted completely. Travel with the mobile elevating work

platform or aerial lifts in an elevated position is not permitted.

8. No person shall be permitted to ride the hook, sling or load of any hoisting equipment.
9. With every load, the slings and bindings shall be checked and readjusted as necessary to ensure safety and stability.
10. All slings and other fittings shall be of sufficient strength, the proper type and safe for their intended use.
11. Signals to the equipment operator shall be given by one competent person designated to perform the task. The operator shall, however, obey a "stop" signal given by anyone.
12. Load chart and /or data plates shall be posted where the operator can readily view the information while operating the equipment.
13. Hoisting apparatus and aerial devices shall be inspected by the operator daily. This inspection shall be logged.
14. ***Visually inspect the load lift points or lugs for wear, cracks, damage, or distortion and consider the need for a non-destructive examination. If any deficiencies are identified, then notify your supervisor. Deficiencies must be repaired prior to completing the lift.***
15. ***If a personal hoisting apparatuses being used:***
    a. ***Slings can only be used***
    b. ***A lift test is required***
    c. ***The lift cannot exceed 50% crane capacity***
16. Hoisting apparatus and aerial devices shall be inspected and tested by a competent person before it is used, once per year and additionally as identified by the manufacturer or NB Power standards. ***All inspections for hoisting apparatus 2 ton and above and for aerial devices shall be documented within the appropriate logbook. Yearly inspections shall be signed by the competent inspector or engineer as identified in Regulation 91-191 under the New Brunswick Occupational Health & Safety Act, stating that the inspection has been completed in accordance with manufacturer's specifications.***
17. Signals
    a) All hand signal rules shall be always understood and observed by personnel.
    b) The signal person must be identified.
    c) Persons directing the operation shall be always clearly visible.
    d) Only one person shall give the signals.
    e) Signals shall be rehearsed and thoroughly understood before beginning a job.
    f) Stopping any signal means to "stop" and "hold".
    g) A sharp cry from anyone means "stop" and "hold". This is the only signal acceptable from anyone other than the person directing the work.
    h) Signals should be given deliberately and thoughtfully.

References

1. OHS Act, Regulation 91-191, PART XV, Section 207 to 215.
2. HSEE-03-59 Aerial Lifts Elevating Work Platforms and Material Personnel Hoists

6.6 OFF ROAD OPERATION

1. All off-road vehicles shall be operated in accordance with the provisions of the New Brunswick Motor Vehicle Act, the All-Terrain Vehicle Act, all local ordinances, and in compliance with the manufacturers' recommendations.
2. Only those employees having received appropriate training in their use shall be permitted to operate off-road vehicles.
3. Seat belts are required to be used for all off road vehicles equipped with rollover protection.

4. For transporting of personnel on Muskeg / Marooka type vehicles, follow the Code of Practice.
5. Protective clothing shall be worn which shall be appropriate for any anticipated weather conditions.
6. When traveling alone with an off-road vehicle, the employee shall abide by the code of practice as per the working alone regulation.
7. First Aid Kits shall be carried on all off-road vehicles.
8. Tool kits, operating manuals, and minor service items such as belts, spark plugs, gas line antifreeze, shall be carried on all off-road vehicles when used in isolated areas.
9. Additional fuel, when required, shall only be carried in approved containers with the appropriate WHMIS labels.
10. Only competent employees are allowed to operate, inspect and maintain off-road vehicles and the equipment mounted on them.
11. No person, other than the driver, shall ride on any tractor, bulldozer, or like machinery (Nodwell, Muskeg, Terreveh), unless the vehicle is designed to transport personnel.
12. ***Any isolated work requires an emergency transportation and communication plan.***

References

1. Motor Vehicle Act, Chapter 17 (consolidated to December 17, 2010)
2. All-Terrain Vehicle Act
3. OHS Act, Regulation 92-133
4. TLM Isolated Line Work First Aid Transportation Plan VIII-A.1.00

6.7 TRAILERS

1. Trailers shall be equipped and operated in accordance with the New Brunswick Motor Vehicle Act.
2. It shall be the driver's responsibility to ensure that all required equipment is functioning, that the hitch connections and safety chains are properly connected and that the load is secured prior to towing a trailer.
3. Prior to coupling or uncoupling, the trailer shall be adequately blocked to ensure balance and immobility. Wheel chocks shall be used.
4. No employee shall walk between a vehicle and its connected trailer while it is in motion or likely to be moved.
5. Whenever the load upon any vehicle extends to the rear one hundred twenty-five centimeters (125 cm) or more beyond the bed or body of such vehicle, there shall be displayed at the extreme rear end of the load at dusk, a red light or lantern plainly visible from a distance of at least one hundred fifty meters (150 m) to the sides and rear, and the red light or lantern required shall be in addition to the red rear light required upon every vehicle and at any other time there shall be displayed at the extreme rear end of such load a red flag or cloth not less than thirty centimeters (30 cm) square and so hung that the entire area is visible to the driver of a vehicle approaching from the rear.
6. No load shall exceed 24m without a permit.
7. Trailer weight shall not exceed the maximum allowable weight as indicated on the vehicle registration.
8. ***When trailer is parked and not used, wheel chocks shall be used.***

Reference

1. Motor Vehicle Act, Chapter 17, Section 190, 191, Section 216, 255 (1) and 255 (2)

6.8 TRANSPORTATION OF MATERIAL

1. All material carried in or on vehicles, including tools, shall be so stored as to prevent personal injury. Particular care shall be exercised to ensure a load is properly secured to prevent it from slipping or falling off the vehicle.
2. Any applicable TDG or WHMIS requirements shall be met.

Reference
1. Motor Vehicle Act, Chapter 17, Section 203.1
2. HSEE-03-38 WHMIS
3. HSEE-03-39 TDG

6.9 TRANSPORTATION OF PERSONNEL

1. In no case, whether on a public roadway or not, shall employees ride with their feet hanging over the sides or end of a vehicle, nor shall they ride on any exterior portion of a vehicle not designed for carrying passengers.
2. Seat belts shall be worn by all occupants while the vehicle is in motion.
3. No person shall ride on a load of poles, in or on any trailer.
4. The number of employees riding on the front seat shall not exceed the number of passengers for which the seat was designed.
5. No person shall mount or dismount any vehicle while it is in motion.
6. Vehicles not originally designed to carry passengers may be retrofitted to do so when used in conjunction with an approved code of practice.
7. Travelling in buckets of aerial device will be permitted providing the following conditions are adhered to:

    a) Vehicle speed is limited to 10 km/hour.
    b) The main boom shall be in the stowed position with any retractable portions retracted as much as possible.
    c) The operator of the unit shall take care to avoid potholes, soft shoulders and other conditions that may cause sliding or tipping of the vehicle while moving.
    d) The PTO of the unit shall be disengaged during travel.
    e) Care shall be taken to control vehicular traffic.
    f) The practice should only be used for repositioning over short distances and should not be used to travel over long distances along a highway or right of way.
    g) The occupant of the bucket shall be properly tied off.
    h) The level of the bucket should remain at least 2 ft. (609mm) clear of the ground, and no higher than the level of the stowed lower boom.

    In addition to the above conditions, the final decision will be left with the person(s) in the bucket(s) to determine if the task can be performed without undue risk to their health and safety.

Reference
1. Motor vehicle Act, Chapter 17, Section 238(1) (consolidated to December 17, 2010)

6.10 WATER OPERATIONS

1. When the need arises to work or travel in any type of watercraft owned, operated, or hired by NB Power, it shall be the responsibility of the ***supervisor*** to select one competent employee to be responsible for each craft.
2. Employees using watercraft shall wear a life jacket or personal floatation device.
3. All watercrafts shall be equipped, operated, and maintained in accordance with the Federal Ministry of Transport Regulation.
4. Where the water temperature is below ***15*** degrees Celsius, flotation suits shall be worn by all

employees.

5. The shell of the life jacket or flotation device shall be bright yellow, orange or red and have retro-reflective material fitted on the surfaces normally above the surface of the water.
6. When working on stationary objects adjoining water, the ***supervisor*** shall select only competent employees to carry out the work and shall take whatever actions are required to minimize slipping and falling hazards in the work area. This may include the wearing of Ministry of Transport approved personal flotation devices (P.F.D.) or the use of lifelines by those employees engaged in the work.
7. Where an employee is exposed to a risk of drowning, a fall protection system, a lifejacket that conforms to CGSB Standard CAN/CGSB-65.7-M88, a personal floatation device (PFD) that conforms to CGSB Standard CAN/CGSB-65.11.M88 or an automatically inflatable personal floatation device that meets UL1180-95 shall be used.
8. A lifejacket is the only acceptable buoyancy device when the employee is working alone or if there are insufficient resources to provide a quick and effective rescue.
9. Where an employee may fall into water or any other liquid and may require assistance, an emergency procedure shall be posted. The specifics for the content of the emergency procedure can be examined by reviewing section 51 (8-12) of the Occupational Health and Safety General Regulation 91-191.
10. All diving operations shall be in accordance with provincial statutes. Divers shall meet CSA Standards CSA 275.4 for competencies.

Reference:
1. OHS Act, Regulation 91-191, Section 51
2. HSEE-03-28 Water Operations

6.11 TRAFFIC CONTROL (Work Area Protection)

1. Employees who work on roadways, highways, and bridges are exposed to risks from vehicular traffic and machinery. Employees who set up, take down traffic control devices and control traffic must be competent.
2. Traffic cones, barrels, concrete barriers, and trained traffic control persons (signallers) are some of the controls to keep employees safe from vehicular traffic. Controls for traffic on highways and bridges may differ depending on the posted speed, number of lanes, and the type of work being carried out.
3. Proper signage must always be present and visible in Traffic Control Zones to protect employees, and to advise the motoring public of work being completed on or near the highway.
4. Traffic Control Plan must be documented and reviewed before work begins.

References
1. OHS Act, Regulation 91-191, Part X, Sections 91, 92, 93 and 94
2. Standard Work Method on Work Area Protection
3. HSEE-03-64 Traffic control
4. WATCM – Work Area Traffic Control Manual (DTI)

6.12 EMERGENCY EQUIPMENT (vehicles and equipment)

Emergency equipment must be inspected.

1. First Aid Kit

   All NB Power owned vehicles shall be equipped with a first aid kit and the driver shall ensure that such a kit is kept fully stocked.

2. Burn Kits

   Burn kits are required for persons exposed to electric arc, open flame or other risk of burns

3. Portable Reflectors

   All NB Power vehicles 1 ton and above shall be equipped with three portable reflectors.

4. Fire Extinguisher

   All NB Power vehicles will be equipped with the appropriately sized fire extinguishers as per Fleet Policy.

5. Spill Containment Kit

   NB Power vehicles equipped with a hydraulic component such as a boom or digger or has features that operate under hydraulic pressure such as heavy construction or off-road equipment, or is used to transport equipment that contains oil, such as transformer delivery trucks shall be equipped with a containment clean-up kit.

6. All emergency equipment shall be secured in vehicles and employees must know where they are located.

Reference

1. OHS Act, Regulation 91-191, Section 12(2)
2. HSEE-03-73 Fleet Safety

6.13 MAINTENANCE OF VEHICLES AND MOBILE EQUIPMENT

1. When vehicles and equipment are raised for working underneath them, they shall be held by sufficiently strong fixed supports. Depending upon jacks alone is prohibited.
2. When working on vehicles and equipment, employees shall wear appropriate protective equipment as required.
3. Adequate ventilation is required when working on vehicles and equipment in an enclosed building.
4. Only approved work procedures shall be used while adjusting, repairs, or maintenance on equipment that is in motion.
5. ***Energy isolation – A lockout procedure or code of practice should take into consideration more than just power sources for a given machine or equipment. Anything that could cause spontaneously or unexpectedly move is a risk to workers.***

   There are four basic actions in any lockout procedure:

   a) Identify all energy sources connected with the work.
   b) Disable, redirect, or stop all energy from doing what it normally does.
   c) Apply restraint devices to prevent the system from starting up while you work on it.
   d) Confirm that you've reached a zero-energy state.

6.14 MOTOR VEHICLE ACCIDENT REPORTING

Where an NB Power-owned or ***rented*** vehicle is involved in an accident, ***contact the supervisor immediately and*** the following procedures shall be followed as applicable:

1. Employees are to give necessary assistance to injured persons.
2. They shall notify the police and appropriate NB Power officials, as set out in Corporate Policies as per incident notification process.
3. If another vehicle is involved, the NB Power driver shall secure its license number and the names and addresses of the other driver, the owner of the other vehicle, their insurance company, and the names and addresses of the passengers, injured persons and witnesses.
4. The NB Power driver must note details of the accident, such as road conditions, signals or signs,

location of vehicles, fixed objects.

5. ***Eform 145 Incident report and Form 205 Vehicle damage report must be completed when a vehicle incident occurs.***

Reference
1. HSEE-03-03 Incident Reporting Notification and Investigation
2. HSEE-03-24 Hours of Work – Fatigue Management
3. HSEE-03-73 Fleet Safety

6.15 TRANSPORTATION OF DANGEROUS GOODS

1. The identification and transportation of dangerous goods shall be done in accordance with the Transportation of Dangerous Goods Act and Regulations. Adequate training shall be obtained within every 36 months for all people involved in the handling of dangerous goods. Dangerous goods shall meet these criteria and criteria from the ***Transport Canada.***

2. Proof of training shall be always on the person while handling dangerous goods as specified in the act and regulations.

References
1. Corporate Policies - Transportation of Dangerous Goods Policy #1MA-17
2. Canadian Transportation of Dangerous Goods Act, 1992, and Regulation updated 2023
3. Dangerous Goods: A Trucker's Guide, Published by the Canadian Trucking Association. Check with Materials Management for ordering information or to find out the date of the most current edition. This publication is updated periodically, if your copy is more than a year or two old check to find out the most recent edition.
4. HSEE-03-39 Transportation of Dangerous Goods (TDG)
5. HSEE-03-73 Fleet Safety

6.16 RPAS (drone) operations

When operating drones, follow HSEE-03-50 Remotely Piloted Aircraft Systems (RPAS) (drones).

HSEE-03-50 describes the requirements for the use of Remotely Piloted Aircraft Systems (RPAS), also referred to as Drones or Unmanned Aerial Devices (UAVs), at NB Power. This will ensure compliance with the Canadian Aviation Regulations (CARs) (SOR/96-433), as well as Standard 921- Small Remotely Piloted Aircraft in Visual Line-of-Sight and Standard 922 – RPAS Safety Assurance.

References:
1. HSEE-03-50 Remotely Piloted Aircraft Systems (RPAS) (drones)
2. Form 0461 Remote Piloted Aircraft Systems (RPAS)

6.17 VEHICLE AND AERIAL DEVICE MAINTENANCE (all operators including contractors)

1. ***Shall maintain an NB Power Vehicle Logbook (NB Power SCN 965111OQ, provided by the Owner), in the vehicle at all times or any certified Transportation Canada Electronic Logging Device (ELD), documenting all vehicle maintenance including daily, monthly and annual hydraulic inspections, Motor Vehicle inspections, and hydraulic inspections for each of its working vehicles larger than a ½ ton truck. Appendix No. 20 - Fleet Aerial Safety Equipment Inspection Form is attached for reference on items that will be inspected when the Contractor starts work.***

2. ***Shall conduct a daily visual inspection of the vehicle and hydraulic system. The result of this inspection will be recorded in the Vehicle Logbook.***

3. ***All vehicles equipped with an aerial device shall have maintenance completed as per applicable CSA or ANSI Standards. The Annual and OEM recommended inspections must be completed by a NB Power certified shop. This inspection must be done in accordance with the manufacturer maintenance manual, NB Power's hydraulic inspection manual and fulfills the requirements of the NB Occupational Health and Safety Standards 91-191 as it pertains to aerial devices and cranes.***

4. ***Shall ensure that yearly hydraulic inspections are completed by an independent third-party NB Power authorized service provider not affiliated with the Contractor and its Subcontractors. The Contractor shall ensure that the sticker issued for each vehicle that has passed the manufactures inspection criteria is displayed on the driver side lower area of the windshield and inspection details are recorded in the NB Power Vehicle Logbook (NB Power SCN 965111OQ).***

5. ***Vehicles equipped with hydraulic components shall be equipped with an emergency clean-up kit of a size relative to the amount of oil contained in the properly maintained hydraulic system.***

6. ***All vehicles shall carry all appropriate registration, insurance, and licensing as required by law.***

7. ***Shall equip all vehicles with SAE J845 Class 1 warning lights visible 360 degrees.***

8. ***All vehicles equipped with an aerial device shall carry an operator's manual pertaining to that particular aerial device.***

9. ***All vehicles equipped with an aerial device shall be inspected by an NB Power appointed employee to ensure maintenance cycles are completed as per manufactures recommendations before starting each Contract.***

10. ***The operator agrees that its vehicles may be subjected to an audit any time by an NB Power appointed employee or other appointed Service personnel.***

11. ***All vehicles shall meet the guidelines outlined in the "Inspection and Maintenance Guidelines for Vehicle Mounted Aerial Devices".***

12. ***All vehicles shall be audited by NB Power or a Fleet Services representative, at which time all or any items in section 19 "Vehicle and Aerial Device Maintenance" will be verified. Failure to comply may result in removal from the job site until the vehicle is compliant.***

13. ***Shall ensure that its vehicles have audible back-up alarms, and off-road equipment have movement alarms with 85 to 102 decibel output range.***

14. ***All Aerial-lift trucks shall have the appropriate documentation confirming that a stability test has been performed to NB OSHA standards (CSA M88 standards), including re-test if the aerial device has been removed, dismantled or modified in any way. Conversely NB Power will accept a stability report where Work Safe New Brunswick has an approved variant for NB Power or Contractors working for NB Power.***

15. ***All vehicles equipped with an aerial device that have been re-chassied are required to be re-certified according to Transport Canada CMVSS (Canada Motor Vehicle Safety Standard) and the New Brunswick Occupational Health and Safety Act (OHSA) 91-191, (O.C. 91-1035) specifically CAN/CSA C-225-M-88 which covers Vehicle-Mounted Aerial Devices, and ANSI 10.31 for Digger Derricks, and CSA Z150 for Cranes. As per Federal or Provincial requirements, re-chassied aerial devices can be certified in two ways:***

    a) ***By a certified CMVSS body builder, complete with valid NSM mark such as the original Manufacturer or by a qualified Engineer.***

    b) ***Vehicles certified by a qualified engineer must have proper documentation; complete with professional stamp stating that the aerial device and vehicle are mechanically fit, road worthy and safe to operate within the Province of New Brunswick. These documents must be submitted to the Department of Public Safety for their review. Once approved, Public Safety will alter the vehicle's registration to indicate "certified modification". Re-chassied vehicles that do not have the correct documentation as defined by Public Safety (WorkSafeNB) Vehicle Safety (unit) will not be permitted to operate on NB Power worksites. Only once proper documentation is provided to the Dept. of Public Safety WorkSafeNB and NB Power confirming that the vehicle meets all other requirements, will these re-chassied vehicles be permitted to work on NB Power worksites.***

16. ***All vehicles equipped with an aerial device shall have an approved insulated bucket liner. The bucket liner shall be tested as per CSA C225-10 once every 12 months by an approved***

dielectric testing service provider. Bucket liners that meet standards shall be labelled as passed complete with expiry date by qualified service provider. The label will also include service provider identification information. Supporting documentation is required to be on vehicle. The bucket liner shall not be modified in any way, including drilled holes or attachments. Any bucket liner that is damaged or develops cracks that would affect insulating properties regardless of dielectric test expiration date must be removed from service and replaced.

6.18 ELECTRICAL CONTACT WITH AERIALS/BOOM

1. ***Electrical Contact:***

   Following any electrical contract with a Line/Boom unit, regardless of the amount of voltage (secondary or primary) the truck and operator must complete the following steps: aerial needs to be lowered away from the hazard, shut down the unit, cordon off the site, do not move the unit, call the direct Supervisor about the electrical contact.

   Warning: After an electrical contact of a boom, tires of the vehicle may rupture suddenly and unexpectedly, or they could rupture a significant time after the contact. Ensure all employees stay a safe distance from the vehicle after an electrical contact.

   The Supervisor must notify, Health and Safety, and the Fleet Coordinator of the electrical contact. Once the appropriate personnel have been notified and arrive at the location of electrical contact, the site will be secured for the investigation. When the unit is released from the site it must be inspected by an approved mechanic shop for any signs of damages resulting from the electrical contact. Damage may result in the replacement of tires and any part displaying electrical contact damages. The aerial unit must be inspected by a certified hydraulic shop (NBP Fleet can provide a list) in accordance with CSA 225 section 8.2.61 "post-event inspection or test". The NBP Fleet Dept. will notify the manufacturer of the aerial electrical contact requesting repair procedures based on what was discovered during the post event inspection. Repairs will be carried out as per the manufacturer's recommendations stated in the repair procedures.

2. ***Reference CSA 225-20 Section 8 Responsibilities of the Owners. Item 8.2.6 Post-Event Inspection or Test in the Manual:***

   After any reported event during which a structural member of an aerial device or mobile unit are suspected of being subject to loading or stresses in excess of design stress (e.g. after an accident involving overturning of the mobile unit or application of unintended external mechanical or electrical forces to the aerial device), the aerial device shall be removed from service and subjected to the applicable periodic inspection requirement in Clause 8.2.4. In addition to the periodic inspection, supplemental non-destructive examination procedures or other test to assist in detecting possible structural damage to the aerial device can be required. All damaged items shall be replaced or repaired before the unit is returned to service.

3. Unplanned or uncontrolled contact, beyond the design limits the machine/equipment is intended for, is defined as follows:

   The following summarizes all NB Power's equipment:

   - Contact outside of any Insulated section – Category 'B', Category 'C', or NON-Insulated Booms.
   - Contact beyond the first 3 feet of the insulated section, measured from the boom tip – Category 'C' Digger Derrick or Squirt Boom (CSR/MMH)
   - Contact causing *Flashover or unintended current flow at boom tip or knuckle – ALL Category 'B' Machines
   - Contact with Secondary (Distribution) resulting in a Flashover – ALL Insulated and NON-Insulated Booms

- Contact causing *Flashover beyond guard ring – Category ‘A’ or Bare-Hand units
- Monitored Leakage from Boom Tip to Guard Ring that exceeds 200 Micro-amps – Category ‘A’ only

*Flashover is defined as Phase to Phase or Phase to Ground contact, for the purpose of the above statements.

NOTE: In all cases with electrical contact to equipment or machinery, it is imperative that Fleet is contacted for direction. The unit in question should not be moved for any reason (after separation from the contact); unless directed to do so, by the Fleet Coordinator.

6.19 FIELD SAFETY VISITS (FLEET)

Any NB Power Supervisor or appointed employee shall complete random field safety inspections. Inspections will be conducted and documented a minimum of three times per Contract. Items to be inspected will include:

a) Employee photo ID and/or photo driver’s license, for each employee,
b) A review of employee qualifications relative to employee work,
c) Use and condition of personal safety equipment,
d) Tailboard Conference Forms
e) Vehicle Maintenance Logbook,
f) Vehicle license, insurance, and registration,
g) Vehicle safety inspections, safety lighting, fire extinguishers,
h) Emergency Response Plan for medical emergency and fire,
i) Roadside signage,
j) General work area appearance,
k) All vehicles or equipment on the job site,
l) First aid kits,
m) Burn kits,

The Group Supervisor or a Fleet Representative shall document the visit on a Field Safety Visit Report and shall keep this report on file. Any corrective action will be noted, with a time limit for correction.

SECTION 7 OPERATIONS AND MAINTENANCE

7.1 ARC FLASH

Arc flash refers to the flash of light and heat that is created when energy is released between a live conductor and another conductor or the ground. The energy released heats the air to extreme temperatures which can result in fires and burns. The blast may also send out melted fragments of damaged materials in a pressure wave. The noise can also cause hearing loss.

Only competent workers wearing appropriate arc-rated clothing and arc-rated PPE shall be allowed in an area where there is an identifiable risk that an arc flash hazard is present.

Each division must follow their internal standard for arc flash ***prevention and*** protection.

References:

1. GS068 – Arc Flash Prevention and Protection
2. T&D Arc Flash Standard

7.2 BLASTING AND EXPLOSIVES

Only those employees who are trained, qualified and authorized shall ***conform to all the Federal, Provincial/State, and local regulations, and NB Power requirements associated with blasting operations.***

At a minimum, the contractor will notify NB Power 24 hours in advance of any operation

Explosives shall be stored in a locked magazine according to standard practices, and regulatory requirements. Detonating caps shall not be stored with explosives. Explosives shall not be primed or fused until immediately before use.

The contractor shall perform blasting only with skilled, experienced operators, under the direction of a certified blaster, and with written approval from NB Power.

References

1. OHS Act, Regulation 91-191, Part XII
2. The Explosives Act (Canada)
3. Standards for Blasting Explosives and Detonators published by the Minister of Energy, Mines and Resources Canada
4. HSEE-03-65 Blasting and Explosives Management

7.3 POLES - GENERAL

1. At minimum, a pole-setter ***deemed competent by NB Power***, shall direct the handling of poles and only one employee shall give the standard signals for the group.
2. Poles in storage shall, as far as possible, be handled from the end of the pile and employees shall not needlessly climb on pole piles.
3. Employees shall roll poles away from them using peavies. Poles shall not be caught with peavies while in motion.
4. When handling preservative-treated poles, precautions shall be taken to avoid skin and eye contact with the substance.
5. Only NB Power employees or ***contractors authorized*** by NB Power shall be allowed to hold/secure poles for other utilities and municipalities. ***They must have a certified line truck to hold the pole.***

   Visual pole inspection must be completed on site for mechanical/physical defects before the pole is installed as per SWM VIII-A.1.01 Pole Work – General

References

1. OHS Act, Regulation 91-191, Section 52, 53, 294(4)

7.4 CLIMBING POLES

1. Employees shall wear appropriate personal protective equipment.
2. Employees shall ensure that fall protection is used when working at or above 3 m (10 ft.).
3. Employees shall ensure that their climbing equipment is in good condition before climbing a pole.
4. Climbers and body belts shall not be worn by employees engaged in pole setting and removing operations.
5. If hazards are identified on or near the pole, because of unauthorized signs, tacks, nails, clotheslines, etc., such hazards shall be removed or guarded against, prior to climbing the pole or structure.
6. Employees shall take every precaution to avoid weather cracks, checks, knots, etc., to prevent spurs from cutting out.
7. Employees shall acquaint themselves with the circuits, voltage and apparatus on the pole before climbing.
8. Employees shall determine the best climbing space to avoid ground wires, telephone wires before climbing the pole.
9. When a pole is raked or leaning, climbing shall be done on the high side of the pole. Employees shall avoid grasping pins, brackets, crossarms, braces, or other attachments that may pull loose.
10. When climbing poles or structures carrying live lines or apparatus, sufficient artificial light shall be provided under night conditions to ensure reasonable safety to employees.
11. All apparatus (transformers, capacitors, conductors and associated protective equipment) shall be treated as alive unless de-energized.

Reference

1. OHS Act, Regulation 91-191, Section 49

7.5 WORKING ON POLES

1. Pole safety straps shall not be placed around a pole closer than 0.3 m (1 ft.) from the top when there are no attachments to prevent it from slipping over the top of the pole.
2. Under no circumstances shall an employee fasten both snaps of the safety strap in the same “D” ring, to reach further out on a pole.
3. Work aloft shall not be permitted while tamping bars are being used. Workers on the ground shall avoid taking a position directly under a worker aloft.
4. No employee shall jump from or slide down a pole or guy wire.
5. Materials and tools shall not be thrown to employees working aloft but shall be raised and lowered with a handline and the use of an approved tool bag as required.
6. Materials and tools shall not be left unsecured in overhead positions.
7. Axes shall not be used when aloft on a pole.
8. A chainsaw shall not be used when aloft on a pole unless following a Standard Work Method.
9. Employees shall ascend or descend poles one at a time. The first employee shall be in place on the pole or on the ground before the next employee climbs or descends the pole. Extreme care shall be taken when it becomes necessary for one employee to work above another.
10. If, while working on poles, an employee discovers that the grounding connections of equipment are undone or improperly made, then he/she should treat the piece of equipment as though it were at line voltage. The piece of equipment shall be de-energized before any repairs are made to the equipment.

11. All NB Power employees and contractors engaged in overhead line work shall be trained on how to perform a rescue as per the NB Power training.

12. ***Ice Removal on Transmission Lines – When there is an accumulation of ice approaching or exceeding ½" radial thickness on the conductor, ice must be removed before climbing a structure. Method for approved means of removing ice on transmission lines, Transmission Standard Work Method VIII-A.1.08.***

7.6 CHIPPERS

1. Only competent employees shall operate, repair, or service chippers and they shall wear appropriate eye, head, hearing, and foot protection always while so engaged. Further, when feeding the chipper, tight fitting gloves and snug fitting clothing shall be worn. Gauntlet style gloves are not permitted.
2. The chipper shall be operated in accordance with the manufacturer's requirements, recommendations and specifications.
3. Only employees feeding the chipper shall be permitted in the immediate area and no employee shall stand or pass directly in front of the chipper intake while it is operating.
4. A soft wood push stick or brush shall be used to push brush into the feeder past the protecting apron. No body part should be past protective apron/barrier in the chipper.
5. Prior to starting the chipper, the intake shall be checked for and cleared of, foreign objects.
6. Rotation of the cutter drum shall be securely blocked prior to working on the chipper blades. Lock out – Tag out Procedure shall be always followed as per manufacture specifications.
7. Chipper and cutter bar bolts shall be checked daily for proper torque as per the manufacturer's specifications.
8. Chippers shall be equipped with a workable "emergency shut off switch" of approved design and located at the infeed location.
9. When feeding material into chipper, the employee shall exit on the curb side (away from traffic) of the road to avoid entering danger zone of oncoming traffic. Do not stand directly behind intake while feeding material into chipper.

7.7 CONFINED SPACES

1. Each work location shall prepare an inventory of potential confined spaces and the typical tasks to be performed in each.
2. Any work to be performed in a potential confined space shall have a ***Job Hazard Assessment and Confined Space Hazard Assessment*** performed, as outlined in Health and Safety Standard ***HSEE-03-17 Confined Space Entry***,
3. All persons supervising, working in or planning work for Confined Spaces shall be trained in the required safe work practices.
4. No person shall enter a Confined Space until the atmosphere has been isolated and tested to be determined safe to enter.
5. ***No person shall enter until a confined space permit has been issued to a confined space permit holder.***
6. ***All Confined Space entry work shall be properly resourced for confined space rescue.***
7. ***All Confined Space shall have one attendant per location of entry.***
8. Refer to section 4.9 Gas Monitors for Confined Space work.

References

1. HSEE-03-17 Confined Space Entry
2. OHS Act, Regulation 91-191, Part XVII.

7.8 WORKING ON OR ABOVE FLOOR GRATING (Falling Object Prevention)

When working on or above floor grating, a canvas or other suitable covering shall be used to cover the grating to prevent tools or parts from dropping to a lower level; or the danger areas below shall be barricaded with warning signs or guarded by a worker.

When the hazard no longer exists, all barricades and warning signs shall be removed as soon as possible.

Remember to use a hierarchy of controls when preventing objects from falling. The use of hand tool tethers may be necessary if elimination is not practical through canvas or other suitable covering. Example: working in a bucket truck or on a ladder.

Fire blankets are required to be used to prevent sparks and slag from falling through floor grating.

7.9 PRESSURE HOSE

Employees shall use an approved hose and fittings rated for the chemical, temperature and pressure it will be used for. Always follow the divisional standards or manufacturer's specifications including the used of whip checks and retention pins.

When fabricating hoses ensure the couplings are attached appropriately for the intended use (appropriate number of clamps, orientation, torque, etc.). These connections are typically the weakest point of the hose.

7.10 MINIMUM APPROACH DISTANCES TO LIVE LINE AND EQUIPMENT

1. The clearances specified in Appendix 9.1 are the absolute minimum approach distances. Any person who violates these clearances is liable to be injured. Therefore, for all practical purposes, the greatest possible clearance beyond each minimum clearance stated shall be always secured. No employee shall come within, or bring any part of a conducting object within, the distances specified in this rule.
2. When work is done close to live lines and equipment, the supervisor shall ensure that workers do not violate the safe distance rule.
3. Appendix 9.1 establishes the minimum safe limits of approach to energized equipment. Under no circumstances shall these distances be reduced.
4. Employees shall immediately report any defective line, apparatus, or other condition which in their judgment may be dangerous.

Reference

1. Appendix 9.1
2. Minimum Approach Distance Course #S137
3. HSEE-03-25 Minimum Approach Distance

7.11 LIVE LINE WORK - GENERAL

1. No employee shall touch any energized line, wire or apparatus unless the employee is suitably insulated from other conducting or grounded surfaces or uses adequate protective devices.
2. Employees performing live line work shall devote their undivided attention to the work at hand. Unnecessary distractions/conversations shall be avoided.
3. Qualified employees shall not work at any type of live work unless they have been familiarized in the proper methods.
4. Neutral circuits shall never be intentionally opened unless all phase conductors are opened first.
5. Copper based primary conductors, sized #4, #6 or #8 shall be de-energized before being transferred, while the above conductors may be isolated only while installing or removing tap clamps and/or stirrups with a hot stick and rubber gloves.

   Prior to doing any work involving other types and sizes of primary conductor (including the installation and/or removal of tap clamps, and the installation of splicing sleeves, repair sleeves

and stirrups), the following checks shall be performed on the span(s) that is/ are worked on:

a) Conductors shall be checked for damage (burn marks) caused by electrical faults (i.e., tree contact).

b) Conductors shall be checked for broken or worn strands caused by vibration at the tap clamps, tie wires, sleeves, etc.

c) Conductors shall be checked for corrosion caused by environmental conditions.

If there is any doubt whatsoever as to the integrity of the conductor, the line shall be de-energized prior to the commencement of work.

NOTE:
The above conditions can cause the conductor to fail mechanically, allowing the conductor to fall and become a hazard to the worker(s) and the general public. Because of this possible failure, while the checks are being performed, and until the conductor is deemed safe to work on, all non-essential workers and the general public shall be kept clear of the work area.

7.12 INSTALLATION OF GROUNDS

1. Temporary grounds shall be applied for hand-contact work on isolated lines, apparatus, tools or equipment either existing or under construction, wherever there is a likelihood of energizing from any of the following sources:

   a) Electromagnetic or electro-static sources, (e.g. from wind, dust storms, adjacent lines, static electricity).

   b) Accidental energizing from power sources, including backfeed from portable or standby generators.

   c) Contact with crossed or fallen live conductors.

   d) Lightning (direct or indirect).

2. When it has been determined that the apparatus to be worked on has been isolated, a potential check shall be taken prior to the installation of temporary grounds.

3. a) When installing temporary grounds, the grounding jumpers must be connected to a ground first; then the ground clamp applied to each conductor or apparatus of the circuit shall be installed by means of an approved hotstick (i.e., gripall stick and rubber gloves). Clearances must be maintained as per the Minimum Approach Distances.

   b) Secondary temporary grounds (up to 750 V phase to phase) can be installed with rubber gloves only.

   c) Be aware of the dangers of sectionalizing the equipment, thereby cutting off the influence of needed grounding devices.

   d) When using temporary grounds as a means to de-energize apparatus the connection to earth must be such there is no question as to the path to ground, only documented apparatus can be between apparatus and ground. Follow existing grounding procedures/practices at all times.

4. Only devices which are CSA approved or the equivalent for the particular application shall be used to test for potential.

5. When removing temporary grounds, the grounding jumpers shall first be disconnected from the conductor or apparatus by means of an approved hotstick and rubber gloves. Clearances must be maintained as per the Minimum Approach Distances.

References

1. OHS Act, Regulations 91-191, Part XIX Section 286
2. Transmission & Distribution Operating Rules & Regulations

7.13 GROUNDING AND BONDING

1. Grounding and bonding are mandatory when work is performed in the de-energized state on apparatus connected to the electric system or which potentially might become connected to the system.
2. Grounding is the application of approved grounding conductors to electrical apparatus, to render and maintain such apparatus at or near ground potential.
3. Bonding is the connecting together with low resistance conductor of all apparatus and exposed metallic surfaces, whether grounded or not, to provide an equipotential zone around the worker and to provide a path for electric currents to bypass the work area.
4. ***The use of rubber gloves and the proper length and properly rated hotstick is required for the installation and removal of temporary grounds and bonds.***
5. When it has been determined that the apparatus is isolated, a potential check shall be taken prior to installing grounding conductors.
6. Grounding conductors shall be of sufficient size to carry the maximum current.
7. Equipment and apparatus such as guy wires, ground wires in the work area shall either be bonded to the ground or shall be considered alive. Grounding or bonding of aerial vehicles shall be in accordance with standard work methods (or according to established safe grounding and bonding procedures).
8. Approved temporary grounds shall be installed before any work is begun on any isolated lines or apparatus, as specified in Standard Operating Practices.
9. Only devices that are CSA approved or equivalent for the application shall be used to test for electrical potential.
10. All temporary safety grounds shall be tested and inspected every two years by the Test Lab at the Service Center or an external company that tests grounds as per the ASTM F855-19a standard.

References

1. Pt. Lepreau: MM-53200-EP01 0087-53200-EP01-001-MM-A Installation and Removal of 4.16/13.8kV grounding device

7.14 SWITCH IDENTIFICATION

1. ***One line diagrams must be available to the line crews for review.***
2. Each switch shall be properly identified on the pole, apparatus or structure. All switches shall be considered energized from both sides unless positively determined otherwise.

7.15 BACKFEED

When there is a possibility of backfeed from any source, the employee shall ensure that there is protection against backfeed.

NOTE: Some sources of backfeed are:

a) inadvertent paralleling of transformers
b) electromagnetic or electrostatic sources
c) any mobile or standby generator
d) contact with crossed or fallen wires
e) lightning (direct or induced)
f) illegal power sources such as bypassed meters

References
1. OHS Act, Regulations 91-191
2. NB Power Transmission & Distribution Operating Regulations
3. NB Power Standard Work Methods
4. Pt. Lepreau: SI-01365·P01 0087-01365-P001-001-SI-A Authorizing and Monitoring Maintenance

7.16 WEATHER/ELECTRICAL STORMS

This applies to all outside work areas substations, terminals, line maintenance, top of roofs, exposed structural steel, exterior scaffolds, etc.

1. When thunderstorms threaten, do not start anything you cannot quickly stop. Pay attention to the daily forecasts to know what to expect during the day. Also, pay attention to early signs of thunderstorms: high winds, dark clouds, rain, distant thunder or lightning.
2. When weather conditions make a job unduly hazardous, work shall be suspended immediately.
3. When working outdoors during an electrical storm, employees shall keep clear of trees, towers, poles, exposed ridges and peaks, wire fences, clotheslines, metal pipes, and shall suspend any waterway operations.
4. Work being carried out on or near lines or apparatus where lightning might cause personal injury shall be suspended when an electrical storm can be seen, heard, or is known to be in the general vicinity of the work location. When System Dispatch and/or Energy Control ***is aware of*** an electrical storm within the general vicinity of work in progress, they shall notify the crew concerned.

7.17 WORK PERMIT

A Work Permit System is designed to ensure that potentially hazardous routine and non-routine work can be carried out safely. It specifies the work to be accomplished and authorizes it to be started under the strict observance of work and safety procedures and work methods. All NB Power employees affected by these rules are required to thoroughly understand and observe all the rules in the section of operating regulations which apply to their work. All such employees are subject to periodic examination of their knowledge of these rules.

References
1. NB Power Transmission & Distribution Operating Regulations
2. NB Power Plant Operations Division Policies and Procedures, GS50
3. Pt. Lepreau: SI·01365·P01 0087-01365-P001-001-SI-A Authorizing and Monitoring Maintenance

7.18 TREE PRUNING

1. Unless specifically trained, chain saws shall not be used when aloft in a tree unless following the NB Power-Arbor Canada Utility Arboriculture Standard Work Method.
2. Axes or brush hooks shall not be carried on the shoulder.
3. Where there is danger that a tree may strike and damage property, or utility infrastructure, industry approved control methods/mechanisms shall be used.
4. Felling operations, once started, shall be finished before the crew leaves for the night or lunch hour.
5. Aerial lifts are not to be used for supporting and lowering branches.
6. When tree removal or tree maintenance makes it necessary for an NB Power contractor to approach closer to an energized electrical utility line or utility line equipment than the distances specified in Appendix 9.1,
7. ***All contractors performing vegetation management must have a Green Card certificate.***
8. Only tools and protective equipment that meet relevant standards associated with work around energized lines shall be used. These tools and protective equipment shall be tested as per NB Power Health & Safety Standard.
9. For industry approved procedures on aerial pruning, ground cutting, tree removal or mechanical

mowing, reference NB Power-Arbor Canada Utility Arboriculture Standard Work Method.

10. ***Mechanical mowing including using a cracker must only be performed when the vegetation is below the communication line.***

11. ***Poles and guy wires must be hand skirted within 3 meters.***

References
1. OHS Act, Regulation 91-191, Part XXII
2. Appendix 9.1

7.19 OVERHEAD DOORS

Best practice is for employees to use personnel doors when entering and exiting buildings. If they must walk under the overhead door (ex: moving material, personnel door not available) it must be in the fully opened and locked position (if possible) before travelling through.

Overhead doors must be inspected annually as per manufacturer's specifications.

7.20 EXCAVATION AND TRENCHING

Any excavation below 4 feet (1.2 m) is considered a trench, and special precautions are required including sloping and/or benching the sides along with proper setbacks to prevent cave-ins. When spaces/obstructions prevent this then proper shoring, bracing or caging is required. These require certification by an engineer and shall make the proof of the certification available to a WorkSafeNB officer on request.

Anyone working in or around work that involves trenching must be knowledgeable of the hazards and controls. Air quality detection may be necessary, prior to the start of work, or continuously based on hazards present.

Before beginning an excavation or trench, the supervisor shall ensure that the location of any underground utility line or piping is determined. ***Hydrovac must be used when line locates are not possible (interference, etc.).***

NEVER enter an excavation that is not safely shored, sloped, braced, caged or has standing water. If there is a cave-in, even a small one, GET OUT OF THE TRENCH AND STAY OUT until the excavation has been made safe!

Reference:
1. General Regulation 91-191 under the Occupational Health and Safety Act, sections 180-18
2. HSEE-03-23 Excavation and Trenching

7.21 RAILWAY SAFETY

All employees and contractors working on behalf of NB Power must have their CN E-Rail Safe certification and have a CN Work Permit when working within 30 ft of a railway. This includes activities such as:

- Walking in the 30 ft boundary
- Falling a tree in the boundary
- Breaking the 30 ft boundary in an aerial basket

For emergency situation contact CN for special allowances at 1-800-465-9239 or 1-800-661-3963.

Reference:
1. HSEE-03-53 Railway Safety

SECTION 8 OCCUPATIONAL HEALTH

8.1 COLD STRESS

Cold stress occurs when the body is cooled (via convection, evaporation and conduction) to levels that damage cells or reduce the core body temperature. Tissue cooling is directly related to, but not limited to, the following:

a) Air temperature
b) Wind speed
c) Amount of work being done
d) Type and amount of clothing

When an employee is exposed to extremely cold temperatures, a competent person shall measure and record the conditions at frequent intervals.

When an employee is exposed to extremely cold temperatures, that employee shall be instructed by a competent person on the symptoms of cold stress and the precautions to be taken to avoid injury from cold stress.

An employee working in extremely cold temperatures shall follow the work-warming regimen for cold, found in the Threshold Limit Value booklet.

References

1. OHS Act, Regulation 91-191, PART III, Sections 22 and 23
2. ACGIH publication "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices"
3. Appendix 9.2
4. HSEE-03-72 Thermal Stress Standard

8.2 HEAT STRESS

Heat stress disorders occur when our bodies cannot sweat fast enough to get rid of heat. High heat and humidity force our sweat glands to work harder and increase the chance of heat stress disorders. If these glands cannot handle the heat stress, body temperature will rise. If unchecked, this can cause vital organs to malfunction. Sickness and even death can result.

When an employee is exposed to extreme heat, a competent person shall measure and record the conditions at frequent intervals.

When an employee is exposed to extreme heat, that employee shall be instructed by a competent person on the symptoms of heat stress and the precautions to be taken to avoid injury from heat stress.

An employee working in extreme heat shall follow the work-rest regimen for heat found in the Threshold Limit Value booklet or Humidex Response Plan (Appendix 9.3)

References

1. OHS Act, Regulation 91-191, PART III, Sections 22 and 23
2. ACGIH publication "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices"
3. Appendix 9.3
4. Humidex Based Heat Response Plan, Occupational Health Clinics for Ontario Workers Inc., May 2011
5. HSEE-03-72 Thermal Stress

8.3 LIGHTING

1. Adequate illumination shall be provided in all working areas, taking into consideration the nature of the work involved and the accepted standards of quantity and quality of light requirements.
2. ***Emergency lighting must be tested every month or at a frequency specified by the manufacturer to ensure that it will function in an emergency.***
3. Where ambient lighting levels are not suitable for a particular job/task then additional lighting should be procured.

References
1. OHS Act, Regulation 91-191, Part IV, Sections 26, 27 and 28
2. Canadian Electrical Code, PART 1, Section 46

8.4 NOISE

1. Sound level measurements shall be taken throughout the workplace by a competent person using a sound level meter. These tests shall be repeated every three years or sooner if conditions have changed.
2. Warning signs shall be posted at entrances to areas where noise levels exceed 85 dBA. Areas or equipment exceeding 100 dBA shall be individually posted. Approved hearing protection will be provided and made readily available at these locations.
3. Engineering controls shall be used where practicable to reduce sound levels.
4. Individuals working or present in areas where noise levels routinely exceed 85 dBA, or areas where they may be exposed to impulse or impact noise, shall always wear approved hearing protection. A choice of hearing protection will be made available.
5. Sound levels should be considered in the purchase of new equipment with a goal of keeping ambient noise levels below 85 dBA.

Reference
1. OHS Act, Regulation 91-191, Part V, Sections 29 to 33
2. HSEE-03-40 Hearing Loss Protection and Noise

8.5 RADIATION

1. ***All work involving radiation, radiation devices or radioactive materials shall be done in accordance with the radiation protection program documents referenced in the licence issued by the Canadian Nuclear Safety Commission (CNSC) for the facility.***
2. ***All radiography and x-ray fluorescence work shall comply with the terms and conditions of the operator's CNSC issued licence.***
3. ***Work with radioactive materials or radiation shall be performed only by trained employees under the direct and immediate supervision of the Radiation Safety Officer RSO (or equivalent) or similarly trained employees.***

Any work with radioactive materials shall only be done with the knowledge and consent of the licence holder and in accordance with the CNSC issued licence, including source removal, relocation or repairs. All locations using x-ray or radioactive sources shall be identified in accordance with CNSC Regulations.

Reference
1. CNSC issued licenses and Regulations
2. HSEE-03-34 Barrier Tape

8.6 CHEMICAL SAFETY AND WHMIS

1. All employees require WHMIS (Workplace Hazardous Materials Information System) training. Employees working with or in proximity to hazardous materials, formerly referred to as controlled products (hazardous chemicals as defined by the regulations) or responsible for such work, shall be adequately trained on the safe use and emergency measures for the product. The degree of training required will vary with the degree of risk.
2. ***Supervisors must ensure employees are knowledgeable about the specific product that they are using.***
3. All hazardous materials or products containing hazardous material shall have a proper WHMIS label as required by the regulations.
4. A valid Safety Data Sheet (SDS) shall be obtained and kept immediately available for all hazardous materials at any site using the hazardous material.

5. ***When searching for an SDS, ensure the NB Power WHMIS browser is used.***
6. The SDS shall be used to establish safe work practices for work in proximity to or involving the use of controlled products.
7. ***If the cabinets are constructed of metal or other conductive material, they may need to be grounded as a precautionary measure when:***
    - ***The cabinet contains flammable liquid containers, but the flammable liquids are not being dispensed.***
    - ***The cabinet is located in an area where a flammable or ignitable atmosphere can exist, regardless of the type of chemical that is stored inside the cabinet. For example, a storage safety cabinet specific for corrosive chemicals may need to be grounded when the cabinet is located in an area where a flammable or ignitable atmosphere exists.***
8. ***A cabinet will need to be vented according to the requirements of the local fire code or to good practices when it is used to store:***
    - ***toxic or very toxic chemicals,***
    - ***chemicals that decompose and release flammable or toxic gases, or***
    - ***gas cylinders or containers.***
9. ***If a hazardous product is in a container that is not the container in which it was received from the supplier, an employer shall ensur***e that the container is labelled with a workplace label.

References

1. 88-221 WHMIS Regulation
2. HSEE-03-38 WHMIS
3. Flammable Liquid Storage Cabinet memo

8.7 ASBESTOS

1. Asbestos of different types might be present in many locations. It is found most commonly in pipe and duct insulation, but it might also be present in valve packing, gaskets, roofing and other building materials. All work with products containing asbestos will be done in accordance with the "Code of Practice for Working with Materials Containing Asbestos in New Brunswick" ***referenced in New Brunswick General Regulation 91-191 under the Occupational Health and Safety Act, June 2023.***
2. Locations with asbestos containing materials shall maintain ***a site specific Asbestos Management Plan (AMP) including an up-to-date inventory of the location(s) and type(s) of asbestos, authorization process, etc. These AMPs are available to all employees on the Hard Hat site.***
3. Materials suspected of containing asbestos above 1% shall be assumed to be asbestos until otherwise determined by a recognized laboratory.
4. Employees who work in close proximity to asbestos containing materials or whose work may disturb asbestos containing materials shall receive asbestos awareness training identifying the location(s) and type(s) of asbestos, the hazards of exposure to asbestos and the work procedures to be followed when working around asbestos containing materials.
5. All staff who conduct asbestos work as defined in the Code of Practice shall be trained in the hazards of asbestos exposure, the requirements of the Code, the proper care and use of protective equipment, and proper asbestos work procedures through a recognized program.
6. ***Contractors whose employees may be working at or adjacent to asbestos containing materials shall be notified in writing about the presence of the asbestos.***
7. WorkSafeNB shall be notified, in writing, before starting any ***high risk*** asbestos work.
8. ***Only competent employees shall be assigned to asbestos work to ensure the work is performed in accordance with the Code of Practice and AMP.***

References

1. OHS Act, Regulation 92-106, Code of Practice for Working with Materials Containing Asbestos
2. HSEE-03-36 Asbestos

8.8 COMPRESSED GASES

1. Compressed gases shall be used in a safe manner as detailed under Sections 74 to 79 of Regulations 91-191 under the New Brunswick Occupational Health & Safety Act and the recommendations of the Compressed Gas Association.
2. ***Portable gas containers shall be stored:***
    - ***In a well ventilated and dry storage area where the temperature does not exceed 52oC***
    - ***With containers grouped by types of gas and the groups arranged to take into account the gases contained.***
    - ***With full and empty containers in separate areas, and***
    - ***secured and upright.***
3. ***The valves on a portable compressed gas container are kept closed at all times whether the container is charged or empty, except when:***
    - ***Gas is flowing from the container,***
    - ***The gas in the container is maintaining pressure in a supply line, or***
    - ***The container is on stand-by during and between operations using the gas***
4. ***Check valves and flashback arrestors for a portable compressed gas container are installed as close as possible to fuel gas and oxygen***
5. ***With the sole exception of compressed breathing air, compressed gas cylinders shall not be taken into confined spaces.***
6. ***Cylinders shall be handled with care and not dropped, jarred or exposed to temperature extremes.***
7. ***Cylinders shall always have the valve protective cap or other approved protective device in place, except when secured in position for actual use.***
8. ***Cylinders shall not be moved by rolling or lifting by the valve or valve cap.*** A suitable cart, cradle or other approved device shall be used to move cylinders.
9. Compressed gas cylinders, in use or in storage, shall be secured ***in an upright position*** by chain or metal strap to prevent them from falling or being knocked over.
    - When transporting cylinders in an open vehicle, ratchet straps are acceptable to secure them.
    - When transporting cylinders in an enclosed vehicle (space cap) a metal strap or chains must be used.
    - When cylinders are on site (outside) for temporary use in a low fire risk area, ratchet straps are acceptable to secure them.
    - When cylinders are inside a building, a metal strap or chain must be used.
10. Hydrogen, propane and other fuel gas cylinders shall not be stored inside any operating building. Separate, approved, storage buildings or shelters shall be used.
11. Electrical grounding of hydrogen cylinders and bulk storage facilities and distribution headers shall be always maintained. Purging of hydrogen cylinder, trailer tube or supply header valves prior to making hose or pipe connections is not permitted.
12. Secured Gas cylinders may be transported by elevator, but personnel must not be in the elevator with the gas cylinders. While transporting cylinders in the elevator, there must be signage to warn employees not to enter the elevator at the same time.
13. ***When not in use the regulators shall be removed, and the caps shall be installed.***

8.8.1 Hydrogen

1. The CSA defines a Hazardous Location as being within 1.3 meters of a hydrogen source. The Canadian Electrical Code classifies as Hazardous Location as Class 1, Division 2 – Hazardous Location for electrical installations. Local conditions such as poor ventilation or known leaks may require the Hazardous Location to be expanded to ensure employee and plant safety.
2. The Hazardous Location area where hydrogen is stored or used shall be sign-posted "Danger - No Smoking and/or Open Flames and/or Naked Lights".
3. The use of non-intrinsically safe, or non-explosion proof equipment, or spark generating devices such as electrically powered tools and hand tools, is not permitted within a Hazardous Location. Otherwise, special purging procedures must be completed to render the equipment within the Hazardous Location safe for work.
4. The installation of non-intrinsically safe or non-explosion proof electrical equipment is not permitted within a Hazardous Location. Equipment shall be certified for use in a Canadian Electrical Code Class I, Division 2 Hazardous Location.
5. All equipment installed within a Hazardous Location must comply with installation rules as stated in the "Canadian Electrical Code - Section 18 - Hazardous Locations" and the "CSA Guide for the Design, Testing, Construction, and Installation of Equipment in Explosive Atmospheres".
6. Maintenance of electrical devices and panels or junction boxes within Hazardous Locations shall comply with the Canadian Electrical Code and CSA Guideline.
7. Live line work in a Hazardous Location is not permitted.
8. The Hazardous Location qualification of any equipment within a Hazardous Location shall be maintained and not compromised.

8.8.2 Oxygen

1. Oil, grease, or similar materials shall not be allowed to come into contact with oxygen cylinders as they may cause an explosion on contact with compressed oxygen.
2. Oxygen cylinders in storage shall be separated from fuel gas cylinders and other combustible materials, especially oil and gas, by a minimum distance of 6 m (20 ft.) or by a 1.5 m (5 ft.) high non-combustible barrier.

8.8.3 Acetylene

Acetylene cylinders shall be properly secured and always used, transported and stored in a vertical position. They are to be protected from sparks, flames and contact with energized equipment.

Oxygen acetylene compressed bottles shall be equipped with flash arrestors.

8.8.4 Chlorine

1. Chlorine containers shall be stored and properly secured in a cool place and protected from moisture.
2. Every precaution shall be taken to prevent the accidental discharge of the gas and protective equipment shall be immediately available for use in an emergency.
3. Facilities using chlorine shall be equipped with an electronic alarm system to warn of chlorine leaks.
4. Chlorine cylinders shall never be used or stored near flammable materials because of the risk of fire.
5. If possible, during a leak, the cylinder shall be placed upright so only gas escapes.
6. Ammonia may be used to detect leaks.

7. Water should not be sprayed or poured on chlorine leaks.

8.8.5 Nitrogen

While not toxic or flammable, it can replace oxygen and cause suffocation if present in large amounts in a confined space. Some transformers are shipped charged with nitrogen. Entry procedures on confined spaces are to be used when performing transformer work.

8.8.6 Dry Breathable Air

1. Proper pressure-reducing regulators must be used as cylinder pressures regularly exceed 2000 psi. Compressed air must be certified to meet CSA Standard CAN#-Z1870.1-M85.
2. Air cylinders must be secured and stored upright.
3. Under no circumstances should anyone use compressed air to clean off clothing or any part of the body. Cleaning objects, machinery, bench tops, clothing and other things with compressed air is dangerous. Injuries or respiratory hazards can be caused by the air jet and by particles made airborne (re-enter the air).

8.9 PROPANE

1. Cylinders in storage or being transported shall not be exposed to temperatures above 50°C (125°F), an open flame or other source of ignition. They should be protected from damage and tampering.
2. Any cylinder, either empty or filled, which requires a cylinder valve protecting cap, shall have the cap in place while in storage or being transported.
3. The cylinder valve shall be closed, and a safety plug installed in the valve outlet when being transported.
4. A cylinder shall not be transported or stored in a vehicle except when the vehicle is provided with a means to vent the space to the outdoors.
5. When it is necessary to use a cylinder inside a structure, the following conditions shall be met:
   a) The gas shall not be stored indoors.
   b) A pressure regulator shall be used.
   c) The total capacity of cylinders connected together shall not exceed 135 kg (300 lb) and no more than one such manifold shall be located in the same floor area unless separated by at least 15 m (50 ft). Cylinders larger than 0.5 kg (1.l lb) shall be equipped with an excess flow valve.
   d) The excess flow valve shall be either integral with the cylinder valve or in the connection to the cylinder valve outlet. In either case, it shall be installed in such a manner that any undue strain beyond the excess flow valve will not cause breakage between the cylinder and valve.
   e) The cylinder, regulator(s) and manifold shall not be located where they may be subject to damage or temperatures in excess of 50oC (125oF).
   f) When repair work is being carried out in a building not under construction and occupied by people, the cylinder(s) shall be always under the surveillance of the operator.
   g) Each cylinder shall be provided with a protective valve collar.
6. A cylinder in use within a building shall not be located near an exit, stairway or in an area normally intended for the safe evacuation of people.

References

1. OHS Act, Regulation 91-191, Sections 74 to 79
2. Compressed Gas Association CGA P-1-1984, “Safe Handling of Compressed Gases in containers”
3. CSA Guide for the Design, Testing, Construction, and Installation of Equipment in Explosive Atmospheres.
4. CSA standard W117.2-12 (R2017)
5. Current Compressed Gas Association Publications.
6. Canadian Electrical Code - Section 18 - Hazardous Locations.

8.10 SILICA

Silica dust can be a common hazard on the worksite depending on the job scope. Inhaling silica dust can cause silicosis, a serious and irreversible lung disease. Precautions must be taken during the cutting, breaking, grinding, etc. of concrete to prevent and control dust. Ventilation, wetting techniques can aid in mitigative measures and respiratory protection must be used. When planning these work activities please consult with your supervisor or safety representative to take all reasonable precautions.

SECTION 9 APPENDICES

Minimum Approach Distances for Transmission and Distribution assets.

9.1 TABLE 1 - Minimum Approach Distances for Personnel & Equipment *†

Revised January 2013

	A‡		Bð		Cs	
Voltage (Phase to Phase)	**Qualified Electrical Persons µ**		**MAD Qualified Persons, Utility Arborists, Pole Setters**		**Unqualified Persons****	
	ft	**m**	**ft**	**m**	**ft**	**m**
Up to 750V	1ft	0.31m	2ft	0.6m	3ft	0.9m
750V to 15kV	2ft 1in	0.65m	3ft	0.9m	12ft	3.6m
16kV to 25kV	2ft 7in	0.77m	4ft	1.2m	12ft	3.6m
26kV to 69kV	3ft 3in	0.95m	5ft	1.5m	12ft	3.6m
70kV to 138Kv	3ft 7in	1.09m	6ft	1.8m	17ft	5.2m
139kV to 230kV	5ft 3in	1.59m	7ft	2.1m	17ft	5.2m
231kV to 345kV	8ft 6in	2.59m	12ft	3.7m	20ft	6.1m

* Cranes, excavators, dump trucks, man lifts, tools, etc.
† Distances are phase to ground clearance for selected phase to phase voltage
‡ Based on IEEE Std 516-2009
∂ Based on NB OHSA General Regulation 91-191, section 371
ß Based on NB OHSA General Regulation 91-191, section 289
µ Certified A Lineperson, Electrical Mechanic, Power Line Technician, Relay Technician, and their apprentices
** Minimum Approach Distances for Unqualified person/Equipment can be reduced when under the direct supervision of a Qualified Electrical or MAD Qualified Person

9.1 TABLE 2 – Minimum Approach Distances for Personnel and Equipment* When Using Cover-Up Equipment/Barriers†

Revised January 2021

	A‡		B∂		Cs	
Voltage (Phase to Phase)	**Qualified Electrical Persons µ**		**MAD Qualified Persons, Utility Arborists, Pole Setters**		**Unqualified Persons****	
	ft	**m**	**ft**	**m**	**ft**	**m**
Up to 750V	No Contact	No Contact	No Contact	No Contact	No Contact	No Contact
750V to 15kV	2in	0.04m	3ft	0.9m	4ft††	1.2m††
16kV to 25kV	7in	0.16m	4ft	1.2m	4ft††	1.2m††
26kV to 69kV	1ft 3in	0.39m	5ft	1.5m	12ft	3.6m
70kV to 138kV ‡‡	2ft 7in	0.78m	***6ft***	***1.8m***	***17ft***	***5.2m***
139kV to 230kV ‡‡	4ft 3in	1.28m	***7ft***	***2.1m***	***17ft***	***5.2m***
231kV to 345kV ‡‡	7ft 6in	2.28m	***12ft***	***3.7m***	***20ft***	***6.1m***

* Cranes, excavators, dump trucks, man lifts, tools, etc.
† Distances are phase to ground clearance for selected phase to phase voltage.
‡ Based on IEEE Std 516-2009
µ Certified A Lineperson, Electrical Mechanic, Power Line Technician, Relay Technician, and their apprentices.
** Minimum Approach Distances for Unqualified person/Equipment can be reduced when under the direct supervision of a Qualified Electrical or MAD Qualified Person.
†† Form 1155 is required for Unqualified persons working without supervision.
‡‡ Cover-up equipment for these voltage ratings may not be available. These distances are the absolute Minimum Approach Distances for these voltages and work procedures must be performed in such a way that employees shall not violate these distances. Work procedures must be performed in such a way that the employee shall not reach, slip, touch, fall or bring any conducting object within these distances.

9.1 TABLE 3 – Minimum Approach Distances for Qualified Electrical Persons‡ When Performing Barehand Work†

Revised January 2013

Nominal Voltage Phase to Phase	**Phase to Phase**		**Phase to Ground**	
	ft	**m**	**ft**	**m**
69kV	5ft	1.53m	3ft	0.92m
138kV	7ft	2.14m	4ft	1.22m
230kV	10ft	3.05m	6ft	1.83m
345kV	14ft	4.27m	8ft	2.44m

‡ Certified A Lineperson, Electrical Mechanic, Power Line Technician, Relay Technician, and their apprentices.
† Based on IEEE Std 516-2009

9.1 TABLE 4 – Utility Arborist's Working Distances [b],†

Revised January 2013

	A		B		C		D	
			Distance of Portion of Tree from Energized Electrical Utility Line or Equipment					
Voltage (Phase to Phase)	**A Utility Arborist's Insulated Tool**		**Where Employee is Using an Uninsulated Object**		**Where Employee is Using an Insulated Object without an Insulated Aerial Device**		**Where Employee is Using an Insulated Object with an Insulated Aerial Device**	
	ft	**m**	**ft**	**m**	**ft**	**m**	**ft**	**m**
Up to 750V	6in	0.15m	1ft	0.3m	No contact	No contact	No contact	No contact
750V to 15kV	1ft	0.30m	2ft	0.6m	1ft	0.30m	No contact	No contact
16kV to 25kV	1ft 6in	0.45m	2ft 6in	0.75m	1ft 6in	0.45m	No contact	No contact
26kV to 69kV	3ft 4in	0.90m	5ft	1.5m	3ft 4in	1.0m	2ft 6in	0.75m
70kV to 138kV	4ft	1.2m	6ft	1.8m	4ft	1.2m	3ft	0.90m
139kV to 230kV	5ft	1.5m	7ft	2.1m	6ft	1.8m	5ft	1.5m
231kV to 345kV	10ft	3.0m	12ft	3.7m	11ft	3.4m	10ft	3m

[b] Based on NB OHSA General Regulation 91-191, section 371

† Distances are phase to ground clearance for selected phase to phase voltage.

9.2 WIND CHILL INDEX

Cooling power of wind on exposed flesh expressed as equivalent temperature under calm conditions.

Actual Temperature Reading (°C)												
Est. Wind Speed KM/H	**10**	**4**	**-1**	**-6**	**-12**	**-17**	**-23**	**-28**	**-34**	**-40**	**-45**	**-51**
	Equivalent Chill Temperature (°C)											
calm	10	4	-1	-6	-12	-17	-23	-28	-34	-40	-45	-51
8	8	2	-2	-8	-14	-20	-26	-32	-38	-44	-49	-55
16	4	-2	-8	-15	-22	-27	-36	-43	-50	-57	-63	-70
24	2	-5	-12	-20	-27	-37	-42	-50	-58	-65	-72	-80
32	0	-7	-15	-23	-31	-39	-47	-55	-63	-71	-78	-86
40	-1	-8	-17	-26	-33	-42	-50	-58	-66	-75	-83	-91
48	-2	-10	-18	-27	-36	-44	-52	-61	-70	-78	-87	-95
56	-2	-11	-20	-28	-37	-45	-55	-63	-72	-80	-89	-98
64	-3	-12	-21	-29	-38	-47	-57	-65	-73	-82	-91	-100
	LITTLE DANGER In < 1 hour with dry skin. A false sense of security is the greatest danger.				INCREASING DANGER Exposed flesh may freeze within 1 min.			GREAT DANGER Exposed flesh may freeze within 30 seconds.				

Note:
When converting to metric, temperatures and wind speeds were rounded to the nearest digit.
When moving on a snowmobile, skiing, etc., your speed is equivalent to wind movement.
Wind speeds greater than 64 KM/H have little additional effect.
* Developed by U.S. Army Research Institute of Environmental Medicine, Natick, MA.

Threshold Limit Values

Work/Warm-up Schedule for a 4-Hour Shift – Moderate to Heavy Work

Air Temperature Sunny Sky		No Noticeable Wind		8 km/hr wind (5 mph)		16 km/hr wind (10 mph)		24 km/hr wind (15 mph)		32 km/hr wind (20 mph)	
° C	° F	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26 to -28	-15 to -19	Normal Breaks (1)		Normal Breaks (1)		75 min.	2	55 min.	3	40 min.	4
-29 to -31	-20 to -24	Normal Breaks (1)		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-32 to -34	-25 to -29	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35 to -37	-30 to -34	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38 to -39	-35 to -39	40 min.	4	30 min.	5	Non-emergency work should cease					
-40 to-42	-40 to -44	30 min.	5	Non-emergency work should cease							
-43 & Below	-45 & Below	Non-emergency work should cease									

NOTES:

1. Schedule applies to any 4 hour work period with moderate to heavy work activity, with warm-up periods of ten minutes in a warm location and with an extended break (e.g., lunch) at the end of the 4 hour work period in a warm location. For light-to-moderate work (limited physical activity): apply the schedule one step lower. For example, at -35°C (-30 °F) with no noticeable wind (step 4), a worker at a job with little physical movement should have a maximum work period of 40 minutes with 4 breaks in a 4 hour period (step 5).

2. TLV's apply only for workers in dry clothing.

* Adapted from Occupational Health and Safety Division, Saskatchewan Department of Labour.

9.3 HUMIDEX RESPONSE PLAN

Where WBGT readings are not available the humidex may be used with caution to estimate the heat hazard.

For outdoor work obtain the humidex from local weather services or media. Do not use American website "heat index" or "feels like" data as they calculate humidex differently but instead find the humidex on the "humidex calculator" below using temperature and humidity readings.

For indoor work calculate the humidex on the "humidex calculator" using temperature and humidity data measured at the workplace.

For coveralls worn over clothing add 5 °C to the measured Humidex.

Outdoors on partially cloudy days between 10 am and 5 pm add 2 °C to the measured Humidex.

Outdoors on sunny, cloudless days between 10 am and 5 pm add 3 °C to the measured Humidex.

Determine the appropriate response from the following table.

Humidex (°C)	Action
30 – 33	Heat Stress Alert • alert crews and ensure heat stress information available. • provide water and encourage drinking at least 1 cup per hour
34 – 37	Heat Stress Warning • alert staff and watch for signs of heat strain. • provide water and encourage drinking at least 2 cups per hour
38-39	• actively monitor for signs of heat strain and seek medical attention if required. • crews to rest 15 minutes each hour. (rest periods shall not be combined) • drink 1 cup water every 20 minutes
40-42	• actively monitor for signs of heat strain and seek medical attention if required. • crews to rest 30 minutes each hour. (rest periods shall not be combined) • drink 1 cup water every 20 minutes
43-44	• actively monitor for signs of heat strain • if feasible, crews to rest 45 minutes each hour. If 75 per cent work restriction is not feasible work ceases until humidex is below 43 °C • emergency work may proceed at a very reduced rate for a maximum of 1 hour followed by a 1 hour rest in the coolest area available
45 +	Heat Strain Danger • all work to cease until humidex below 45 °C. • emergency work may proceed at a very reduced rate for a maximum of 1 hour followed by a 1 hour rest in the coolest area available, with careful monitoring for signs of heat strain

For more information on the use of Humidex see the NB Power Heat Stress Guide available from Health and Safety

Humidex Calculator

Temp (in °C)	RH = 100%	95 %	90 %	85 %	80 %	75 %	70 %	65 %	60 %	55 %	50 %	45 %	40 %	35 %	30 %	25 %	20 %	15 %	10 %	Temp (in °C)
49																			50	49
48																			49	48
47																		50	47	47
46																		49	46	46
45	NEVER IGNORE ANYONE'S SYMPTOMS DESPITE YOUR MEASUREMENTS!!!																50	47	45	45
44	Humidex	Action															49	46	43	44
43	45+	Stop work														49	47	45	42	43
42	43-44	75% relief													50	48	46	43	41	42
41	40-42	50% relief													48	46	44	42	40	41
40	38-39	25% relief												49	47	45	43	41	39	40
39	34-37	warning & double water											49	47	45	43	41	39	37	39
38	30-33	alert & water										49	47	45	43	42	40	38	36	38
37	25-29	water as needed									49	47	45	44	42	40	38	37	35	37
36									50	49	47	44	44	42	40	39	37	35	34	36
35								50	49	47	45	43	42	40	39	37	36	34	33	35
34							49	48	46	45	43	42	40	39	37	36	34	33	31	34
33					50	48	47	46	44	43	41	40	39	37	36	34	33	32	30	33
32			50	49	48	46	45	44	42	41	40	38	37	36	34	33	32	30	29	32
31	50	49	48	47	45	44	43	42	40	39	38	37	35	34	33	32	30	29	28	31
30	48	47	46	44	43	42	41	40	39	37	36	35	34	33	31	30	29	28	27	30
29	46	45	43	42	41	40	39	38	37	36	35	33	32	31	30	29	28	27	26	29
28	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	27	27	26	25	28
27	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25			27
26	39	38	37	36	35	34	33	33	32	31	30	29	28	27	26	25				26
25	37	36	35	35	33	33	32	31	30	29	28	27	26	26	25					25
24	35	34	33	33	32	31	30	29	28	28	27	26	25							24
23	33	32	31	31	30	29	28	28	27	26	25									23
22	31	30	30	29	28	27	27	26	25	25										22
21	29	29	28	27	26	26	25													21

Reference

1. Humidex Based Heat Response Plan, Occupational Health Clinics for Ontario Workers Inc., May 2011.
2. Heat Stress Guide, NB Power Health and Safety 2003.

PERMISSIBLE HEAT EXPOSURE THRESHOLD LIMIT VALUES (TLVs)
(for use only where a Heat Stress Meter is available)

Permissible amount of work time in each hour of work.	TLV (WBGT in °C)			
	Light Work	Moderate Work	Heavy Work	Very Heavy Work
45 – 60 minutes	31.0	28.0	*	*
30 – 45 minutes	31.0	29.0	27.5	*
15 – 30 minutes	32.0	30.0	29.0	28.0
0 – 15 minutes High risk work environment - Essential work only	32.5	31.5	30.5	30.0

*Screening criteria unreliable in these situations. Perform a detailed analysis of the physiological workload if possible and monitor workers closely.

The workload category may be estimated by ranking each job into light, moderate, heavy or very heavy work as follows:

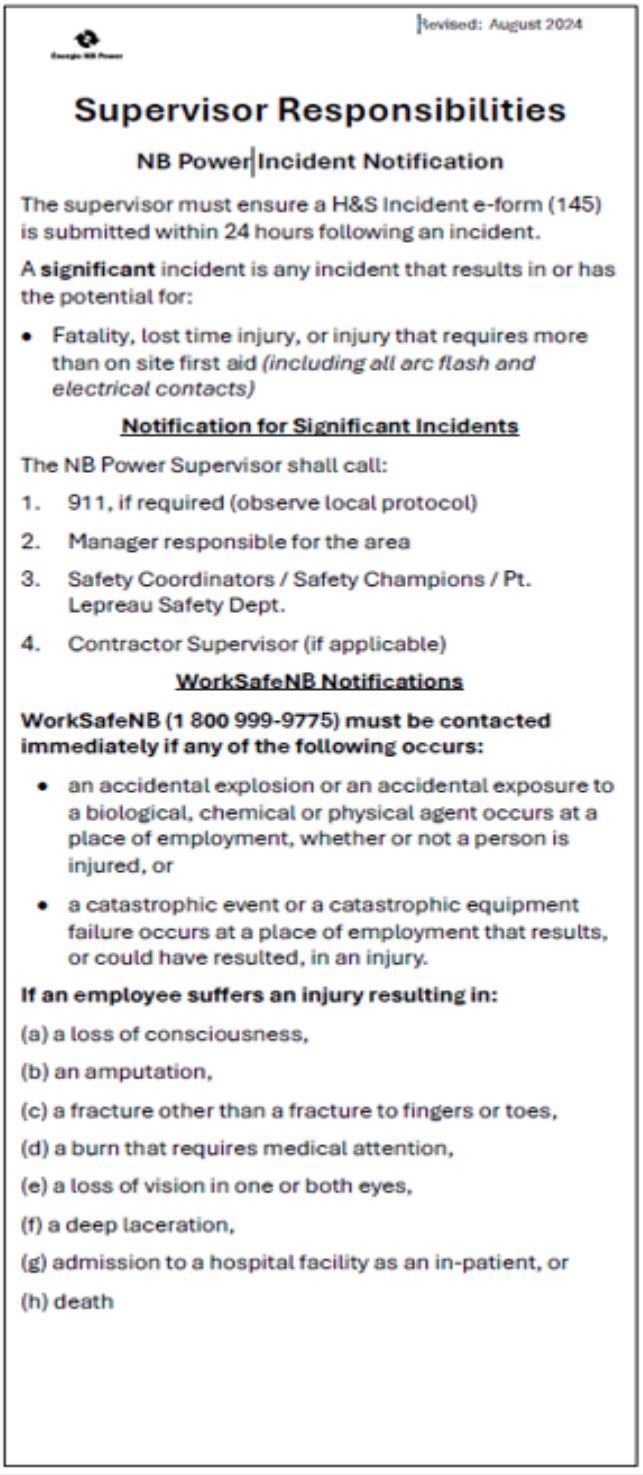
1. Light work: sitting with light manual work, driving, standing with light manual work and occasional walking.
2. Moderate work: sustained hand and arm work, moderate arm and leg work, light pushing and pulling, normal walking.
3. Heavy work: Intense arm and trunk work, shoveling, sawing, pushing and pulling heavy loads, fast walking.
4. Very heavy work: intense activity at a fast pace Overweight and out of shape individuals should approach work in hot areas with caution and apply the next highest workload category, i.e. if performing light work these persons should apply the moderate work TLVs.

The TLVs are based on long sleeved shirts and long pants. Heavier clothing that restricts the body's ability to cool may require the use of adjusted TLVs. Contact the Health and Safety Department for advice in this situation.

The TLVs assume the work area and the rest area have the same or similar WGBT values. Recovery times may be faster in cooler resting areas and in this case time weighted average WGBT values averaged over 1 hour may be used to alter the work-rest schedule.

The table is a screening tool only and assumes workers are trained on the signs and symptoms of heat stress and strain and alert for signs of illness in themselves and co-workers. Never ignore anyone's signs or symptoms of heat related illness and if present begin immediate assessment and first aid. Heat illness can quickly deteriorate to a life-threatening situation.

9.4 INCIDENT NOTIFICATION RESPONSIBILITIES



Revised: August 2024

Supervisor Responsibilities

NB Power Incident Notification

The supervisor must ensure a H&S Incident e-form (145) is submitted within 24 hours following an incident.

A **significant** incident is any incident that results in or has the potential for:

- Fatality, lost time injury, or injury that requires more than on site first aid *(including all arc flash and electrical contacts)*

Notification for Significant Incidents

The NB Power Supervisor shall call:

1. 911, if required (observe local protocol)
2. Manager responsible for the area
3. Safety Coordinators / Safety Champions / Pt. Lepreau Safety Dept.
4. Contractor Supervisor (if applicable)

WorkSafeNB Notifications

WorkSafeNB (1 800 999-9775) must be contacted immediately if any of the following occurs:

- an accidental explosion or an accidental exposure to a biological, chemical or physical agent occurs at a place of employment, whether or not a person is injured, or
- a catastrophic event or a catastrophic equipment failure occurs at a place of employment that results, or could have resulted, in an injury.

If an employee suffers an injury resulting in:

(a) a loss of consciousness,

(b) an amputation,

(c) a fracture other than a fracture to fingers or toes,

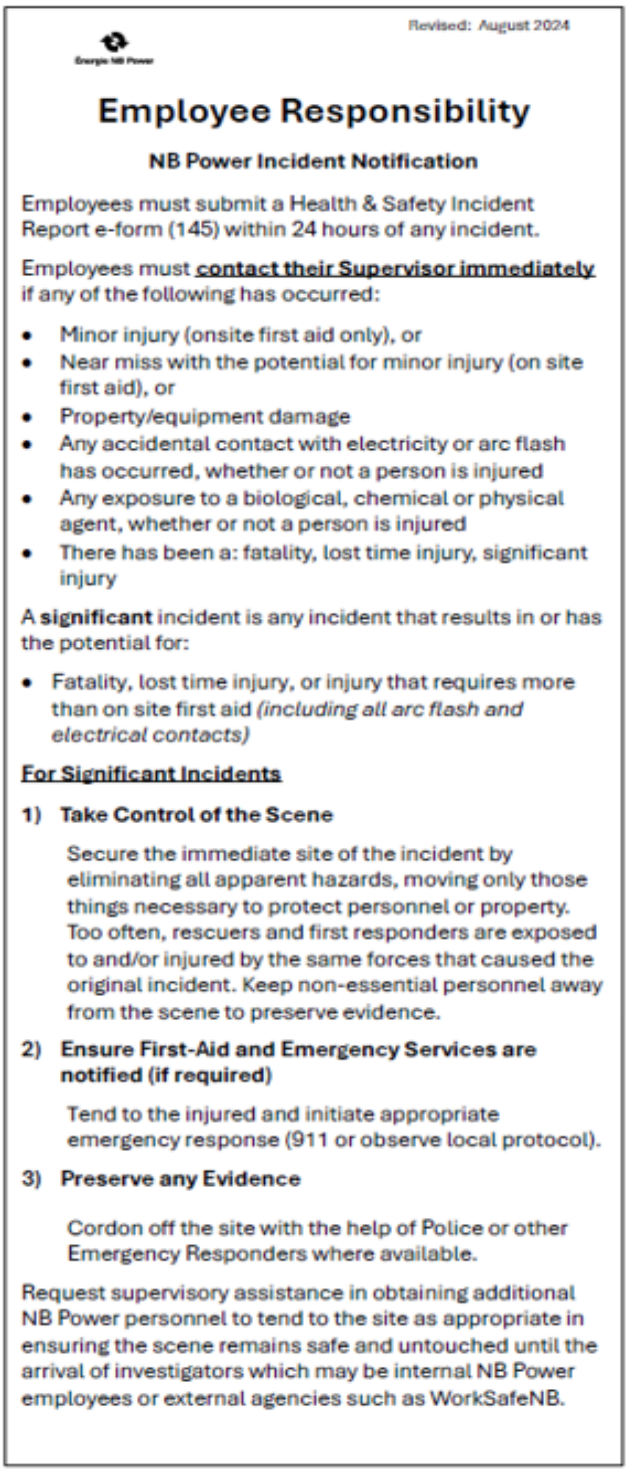
(d) a burn that requires medical attention,

(e) a loss of vision in one or both eyes,

(f) a deep laceration,

(g) admission to a hospital facility as an in-patient, or

(h) death



Revised: August 2024

Employee Responsibility

NB Power Incident Notification

Employees must submit a Health & Safety Incident Report e-form (145) within 24 hours of any incident.

Employees must **contact their Supervisor immediately** if any of the following has occurred:

- Minor injury (onsite first aid only), or
- Near miss with the potential for minor injury (on site first aid), or
- Property/equipment damage
- Any accidental contact with electricity or arc flash has occurred, whether or not a person is injured
- Any exposure to a biological, chemical or physical agent, whether or not a person is injured
- There has been a: fatality, lost time injury, significant injury

A **significant** incident is any incident that results in or has the potential for:

- Fatality, lost time injury, or injury that requires more than on site first aid *(including all arc flash and electrical contacts)*

For Significant Incidents

1) **Take Control of the Scene**

   Secure the immediate site of the incident by eliminating all apparent hazards, moving only those things necessary to protect personnel or property. Too often, rescuers and first responders are exposed to and/or injured by the same forces that caused the original incident. Keep non-essential personnel away from the scene to preserve evidence.

2) **Ensure First-Aid and Emergency Services are notified (if required)**

   Tend to the injured and initiate appropriate emergency response (911 or observe local protocol).

3) **Preserve any Evidence**

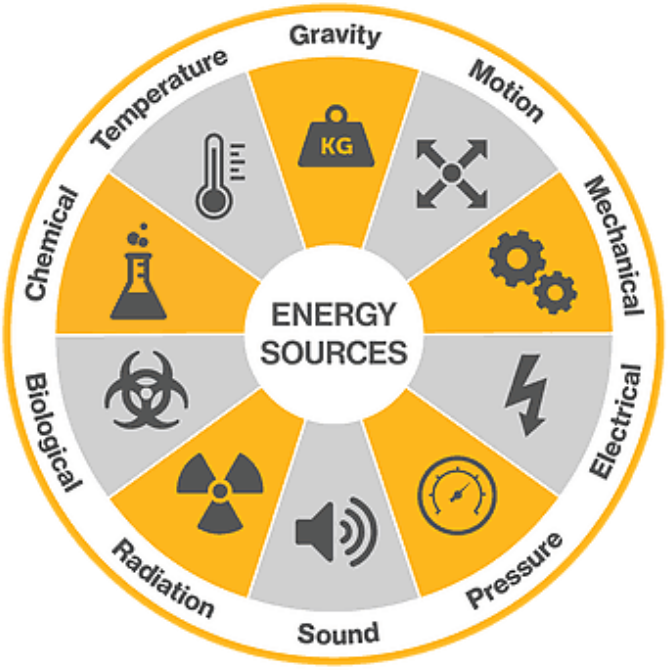
   Cordon off the site with the help of Police or other Emergency Responders where available.

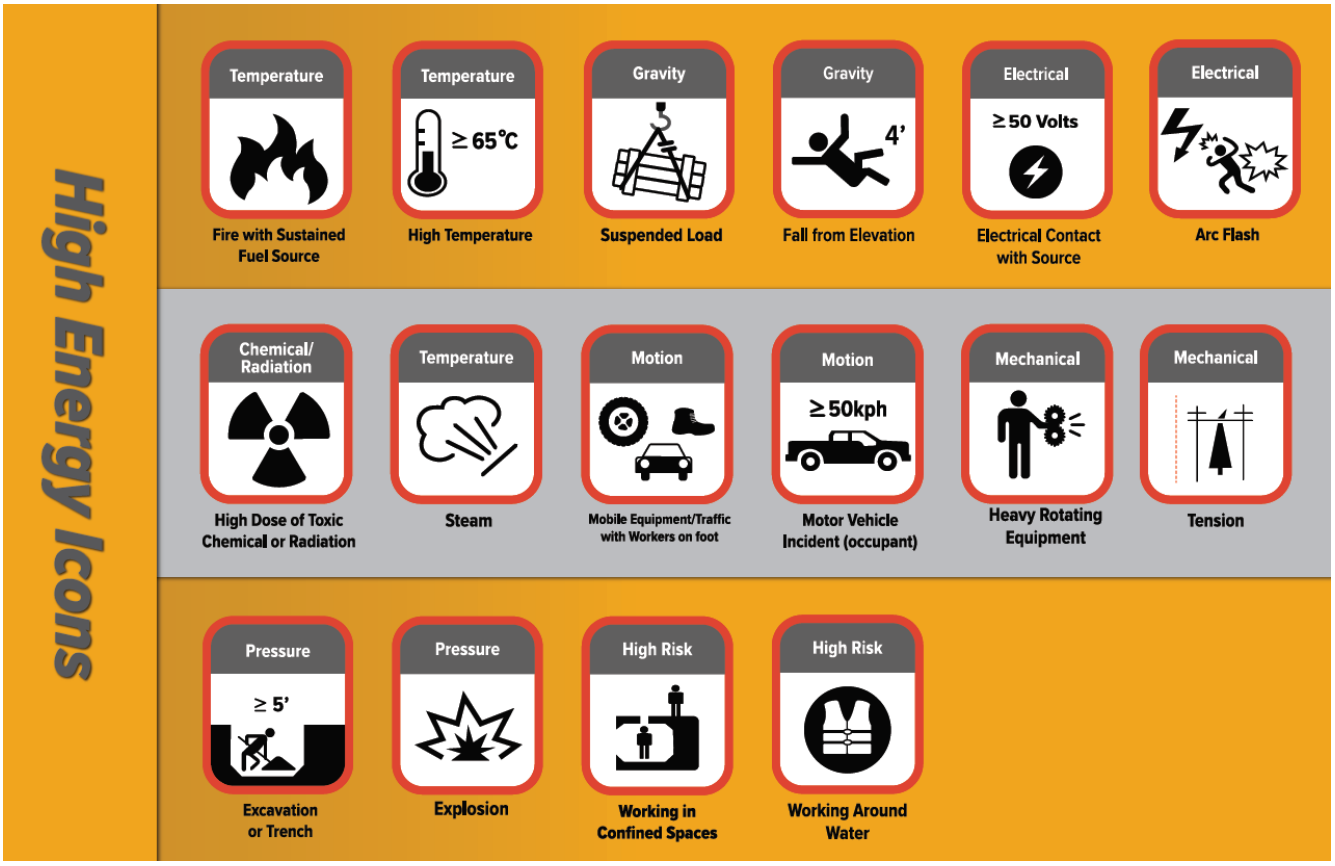
Request supervisory assistance in obtaining additional NB Power personnel to tend to the site as appropriate in ensuring the scene remains safe and untouched until the arrival of investigators which may be internal NB Power employees or external agencies such as WorkSafeNB.

9.5 PROCESS FOR ADDRESSING A SAFETY CONCERN

Although similar, please do not confuse this process with the Right to Refuse process (HSEE-03-14 Right to Refuse Unsafe work).

9.6 ENERGY WHEEL / HIGH HAZARD ENERGY ICONS





9.7 DEFINITION OF SPECIAL TERMS

ACCIDENT

an unplanned event that results in harm to people or damage to property (when such damage had the potential to cause harm to people).

APPROVED

approved by NB Power or certifying agency and “acceptable” in terms of being recognized as tools of the trade.

ARC FLASH

a dangerous condition associated with the release of energy caused by an electric arc.

ARC RATED CLOTHING

clothing that is manufactured and tested specifically to withstand and protect workers from the heat energy release from arc flash. Arc rated clothing or garments shall be:

a) Flame Resistant (FR) and

b) identified with an Arc Rating, expressed by the Arc Thermal Performance Value (ATPV) or Energy of Breakopen Threshold (Ebt)

Note: The most common standard for the manufacturing of arc-rated garments is ASTM F1506, Standard Performance Specification for Flame Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards

AUTHORIZATION

approval of the person or persons responsible for the equipment to be worked on or used and for the work to be carried out.

CODE OF PRACTICE

code of practice is a document when required by regulation, sets out in detail a procedure to ensure ***the health and safety of employees in certain specific circumstances.***

COMPETENT PERSON

a) qualified, because of such factors as knowledge, training and experience, to do assigned work in a manner that will ensure the health and safety of persons,
b) knowledgeable about the provisions of the Act and the regulations that apply to the assigned work, and
c) knowledgeable about potential or actual danger to health or safety connected with the assigned work.

CONFINED SPACE

other than a development heading in an underground mine and excavations, heating, ventilation and air conditioning (HVAC) plenums and related ventilation ductwork, crawl and attic spaces with openings to outside allowing for continuous passive ventilation and other similar structures provided that there are no factors that could lead to the presence of an atmospheric or other hazard, an area that

- ***is enclosed or partially enclosed,***
- ***is not designed or intended for continuous human occupancy, and***
- ***has limited or restricted means of entry or exit that may complicate providing first aid, evacuation, rescue, or other emergency response***

CONTACT HAZARD AREA/WORKING AREA (in the electrical sense)

is that distance from live conductors or apparatus within which the employee could be exposed to electrical shock and burns by reaching, falling, or causing conducting materials to either contact or violate the minimum safe limits of approach or in any other manner expose the employee to existing electrical hazards.

CONTRACTING EMPLOYER

a person who through a contract, agreement or ownership, directs the activities of one or more employers.

CONTRACTOR

a) a person who by contract undertakes all the work at a project site;

b) an owner who undertakes all or part of the work at a project site; or

c) an owner who by contract engages more than one person to undertake all or part of the work at a project site.

DE-ENERGIZED

in the electrical sense means isolated and grounded. In the mechanical sense, means isolated and at rest; not spring loaded; free from any pressure different from that of the atmosphere and free from injurious or explosive gases.

DRIVER

any NB Power employee or contractor authorized by their NB Power Supervisor to operate a vehicle for work purposes.

DUE DILIGENCE

employers, employees and contractors shall take all reasonable precautions to prevent injuries or accidents in the workplace.

EMPLOYEE

a) a person employed at or in a place of employment, or
b) a person at or in a place of employment for any purpose in connection therewith.

EMPLOYER

means a person who employs one or more employees or the person's agent.

FALL ARRESTING SYSTEM

a permanent or temporary assembly of fall protection components designed to arrest the fall of one or more employees.

FALL PROTECTION SYSTEM

a guardrail, a travel restraint system, a fall arresting system, fall restricting system that is either a personal fall restricting system or a collective fall restricting system that was designed to:

a) prevent or eliminate the risk of falling,

b) restrain an employee who is at risk of falling, or

c) stop an employee who has fallen.

FALL PROTECTION SYSTEM (PERSONAL)

the components of a fall protection system for which the employee is responsible and includes a full body harness, a body belt, an energy absorbing lanyard, a fall arrestor, a self-retracting device and the connecting hardware.

FALLING OBJECT PREVENTION

a method of identifying hazards associated with falling objects, such as tools, nuts/bolts, equipment, and safeguarding with physical or passive barriers to prevent injury or harm to equipment. Preventing falling objects from occurring can take place during any activity where employees/contractors may be working at height, such as on grating, a ladder, scaffolding or bucket truck, or above an opening, such as a manhole, waterway.

HEALTH AND SAFETY MANAGEMENT SYSTEM (HSMS)

is an organized written plan to identify and control hazards, define safety responsibilities and respond to emergencies that result in the prevention of accidents and occupational diseases. The objective of a HSMS is to integrate safety and health into all work practices and conditions.

HIERARCHY OF CONTROLS

a prioritized approach for hazard mitigation, in order of the most effective to least effective, being:

- elimination (remove the hazard)
- substitution (replace with non-hazardous material or equipment)
- engineering Controls (create a physical barrier around the hazard such as limiting access or exposure to a hazard, reducing energy available or providing an alternate means of interacting with a hazard)
- administrative Controls (procedures, training, technology, lights, audible alarms, and warning signs)
- Personal Protective Equipment (PPE) (equipment to be worn for protection).

HIGH HAZARD ENERGY

hazards that are most likely to cause a serious injury or fatality (SIF) if an employee contacts the energy. There are 16 high-energy sources identified by icons that represent common high-energy hazards, but do not represent all high-energy hazards. See appendix 9.6

HOISTING APPARATUS

any device or piece of equipment used to lift or lower material or equipment.

HORSEPLAY

any physical interaction that disrupts the ordinary operation of a workplace.

HUMAN PERFORMANCE

a system that comprises a network of elements that work together to produce repeatable outcomes. This includes, but is not limited to; individual behaviours, results, leadership, training, organizational culture, procedures, processes and performance. In its simplest form, human performance is a series of behaviors carried out to accomplish specific task objectives (results).

INCIDENT

an unplanned event that may or may not cause harm to people, equipment, material or the environment.

INJURIES

all injuries are classified as per the Canadian Electrical Association's CEA A-2-2011: Standard for Recording and Measuring Occupational Injury / Illness Experience and Transportation Incidents.

INTERNAL RESPONSIBILITY SYSTEM (IRS)

IRS requires that everyone with a connection to the workplace takes responsibility for their own health and safety and the health and safety of those around them. This includes employers, supervisors, employees, owners, contractors, sub-contractors, contracting employers and suppliers.

ISOLATED WORK (Remote) SITE

a site is isolated when emergency services cannot easily reach it. The time it takes a crew to package and transport an injured crewmember to the Transfer Point and to the care of Emergency Services determines if a site is isolated. Consider weather, time of day and of year (ferry schedules / road closures), and other barriers for crew and Emergency Services. If the distance between work site and Transfer Point is greater than ½ km or walking time greater than 10 min, the site is isolated.

JOB HAZARD ANALYSIS (JHA)

a systematic approach to preparing for a job by listing the steps of the job, identifying the potential hazards, and then removing the hazards or putting defenses in place to mitigate the hazards using the Hierarchy of Controls.

LINE OF FIRE

the path an object under tension, pressure, suspension or any other energy will travel should something fail or go wrong.

MAXIMUM ARREST FORCE

the peak force exerted on a worker when a fall arrest system stops a fall.

NEAR MISS

an unplanned event that causes no injury / loss to people, equipment, material or the environment however, under slightly different circumstances, could have resulted in an accident.

PLACE OF EMPLOYMENT

any building, structure, premise, water or land where work is carried on by one or more employees and includes a project site, a mine, a ferry, a train and any vehicle used or likely to be used by an employee (OHS Act).

QUALIFIED PERSONNEL

a) when applied to work on electrical equipment, a person meeting the definition contained in the New Brunswick Regulation 84-165 under the Electrical Installation and Inspection Act: "qualified person" means a person familiar with the construction and operation of the apparatus and the hazards involved;

b) when applied to work on an energized electrical utility line or utility line equipment

   i. a person who is the holder of a certificate of qualification issued under the Apprenticeship and Occupational Certification Act for the operating lineman trade, construction lineman trade or distribution construction lineman trade, or

   ii. a person who is registered as an apprentice under the Apprenticeship and Occupational Certification Act for an occupation described in subparagraph (i) and who is working within eye, voice and ear contact of the qualified tradesman and under the supervision of a person described in subparagraph (i)

c) when applied to work in the arboricultural operation that occurs closer to an energized electrical line or utility line equipment than the limits set out in subsection 289 (1) of Regulation 91-191, an employee who meets the requirements of section 369 of Regulation 91-191, and

d) when applied to any other type of work that occurs closer to an energized electrical utility line or utility line equipment than a distance set out in subsection 289 (1) Regulation 91-191, an employee who is trained to use and follow a code of practice established by the employer. For work inside plant walls use the applicable in-plant work permit system.

For work outside the plant walls refer to Appendix 9.4

Clarification: Operating Lineman ticket is interchangeable with the Powerline Technician ticket.

RIGHT TO REFUSE UNSAFE WORK

an employee may refuse to do any act where they have reasonable grounds for believing that the act is likely to endanger their health or safety or the health or safety of any other person.

SAFE WORK PLANNING

a process of scoping out work to identify the hazards, assess the hazards and determine the necessary controls to perform the work safely. This process allows for this critical information to be communicated to those performing the work. The process in which this is completed is through a hazard/risk assessment.

SAFETY DATA SHEETS (SDS)

information such as the properties of each chemical; the physical, health, and environmental health hazards; protective measures; and safety precautions for handling, storing, and transporting the chemical.

SHALL

mandatory.

SHOULD

recommended.

SRD (SELF-RETRACTING DEVICES)

there are four new classes of self-retracting lanyards (SRL); SRL, SRL-LE (leading edge), SRL-R (rescue) and SRL-LE-R. All new lanyards must be classified as one of these.

SUPERVISOR

a person who is authorized by an employer to supervise or direct the work of the employer's employees regardless of title, this could be a lead, senior, foreman, etc.

SUSPENSION TRAUMA

suspension trauma (orthostatic intolerance) is a condition that may develop and progressively worsen in a person who is suspended in a vertical position and is motionless for a prolonged period of time while in a fall arrest harness. This is hazardous and could be fatal.

TAILBOARD CONFERENCE/ PRE-JOB BRIEF

a meeting of employees conducted before performing a job to discuss the tasks involved, identify the hazards and controls in place, work procedures, energy source (line of fire) controls, personal protective equipment, employee's state of mind and other safety considerations associated with the job.

TRAVEL RESTRAINT SYSTEM

an assembly of components designed to prevent an employee from reaching an unguarded edge (roof or platform) or an opening.

WORK POSITIONING SYSTEM

a system designed to provide a means of support for an employee at a desired height that allows an employee to have his or her hands free to perform a task.

WORKING ALONE

working in a remote area or an area not easily accessible to summon assistance, or where frequent interaction with other employees is not possible.

UNATTENDED

when a vehicle or equipment is out of eyesight.

9.8 REVISION HISTORY

Section	Change
all	Removal of Safety Employee in Charge
Duties	Align with OHS Act
1.3	Title change from 40-10-50 to Fit for Duty
1.5	Added reference to the Internal Responsibility System
1.6	Align with OHS Act, updated WorkSafeNB's phone number
1.7	Align with OHS Act
1.8	Remove environmental section
1.8	Renumbered – added prescribed treatment from physician
1.11	JHSC project sites
1.13	Administrative Penalties
1.14	Violence and Harassment
2.4	Added spill response requirements
2.9	Working Alone, does not apply to a home office as per WorkSafeNB
2.10	Isolated Work Sites – additional first aid requirement
3.1	Contaminated PPE statement
3.4.4	Protection from Chemical Injuries
3.4.5	Protection from Ionizing Radiation
3.5.6	When to wear ice cleats
3.7	Arc rated clothing shall cover potentially exposed areas
3.9	Type 2 Hard Hat requirement, rules around stickers
3.10	Hearing Protection limits
3.11	Respiratory protection required for welding
3.12	Change in title to from "welding" to "hot work activities"
4.2	Additional information on barrier tape and tags
4.6	Bucket escape kit must be inspected annually
4.7	Added requirement for fall protection code of practice
4.10	Added fire extinguisher inspection requirement for 6 years
5.1	Power tools with trigger locks are not to be used
5.4	Removal of guards is prohibited without the supervisor's approval
5.5.8	Vibration section added
5.6	Align with regulation
5.6.4	Added "ship's ladder" section
5.7.2	Scaffold, align with regulation
5.9	Electric portable power operated hand tools, double insulated or bonded
5.11.7	Complete a critical lift plan (Form 1372) if required as per HSEE-03-12.
5.12	All lifting gear must have a documented annual inspection.
6.1.9	Electronic Logbooks (DVIR's) are required for vehicles
6.1.10	Removed driver's abstract requirement. HR doesn't ask for this when hiring.
6.1.13	Vehicles equipped with Global Positioning Software (GPS)
6.2	Backing up - (personal and work vehicles)
6.3.9	Forklift Attachments
6.13	Energy Isolation – maintenance of vehicles and mobile equipment
6.14	Added Form 205 Vehicle damage report
6.16	Drones – new section
6.17	Vehicle and Aerial Device Maintenance
6.18	Electrical Contact of a Boom
6.19	Field Safety Visit (Fleet)
7.2	Blasting and Explosives – additional information

7.7	Confined Spaces – align with H&S confined space program
7.13	The use of rubber gloves and the properly rated stick is required for the installation and removal of temporary grounds and bonds.
7.20	NEVER enter an excavation that is not safely shored, sloped, braced or caged.
8.1	Cold stress – align with H&S standard
8.2	Heat stress - align with H&S standard
8.3	Lighting – testing requirements
8.5	Radiation – align with CNSC
8.8	Compressed gases – align with regulation
8.10	Silica – new section
9.4	Incident Notification Cards
9.5	Process for Addressing a Safety Concern
9.6	Energy wheel / high hazard energy icons
9.7	Definition of special terms


Énergie NB Power
IBEW
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FIOE
40-10-50